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CULTURAL RESOURCE SURVEYS OF TWELVE
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IN BEAVERHEAD, BIG HORN, CUSTER, GARFIE
GOLDEN VALLEY, AND HILL COUNTIES, MONT

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CULTURAL RESOURCE SURVEYS OF TWELVE PROPOSED ABANDONED COAL MINE RECLAMATION AREAS IN BEAVERHEAD, BIG HORN, CUSTER, GARFIELD, GOLDEN VALLEY, AND HILL COUNTIES, MONTANA

Prepared for

Department of State Lands
Abandoned Mine Reclamation Bureau
Helena, Montana

by

Janene Caywood

Historical Research Associates
Missoula, Montana

December 30, 1987

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CULTURAL RESOURCE SURVEYS OF TWELVE PROPOSED ABANDONED COAL MINE RECLAMATION AREAS IN BEAVERHEAD, BIG HORN, CUSTER, GARFIELD, GOLDEN VALLEY, AND HILL COUNTIES, MONTANA

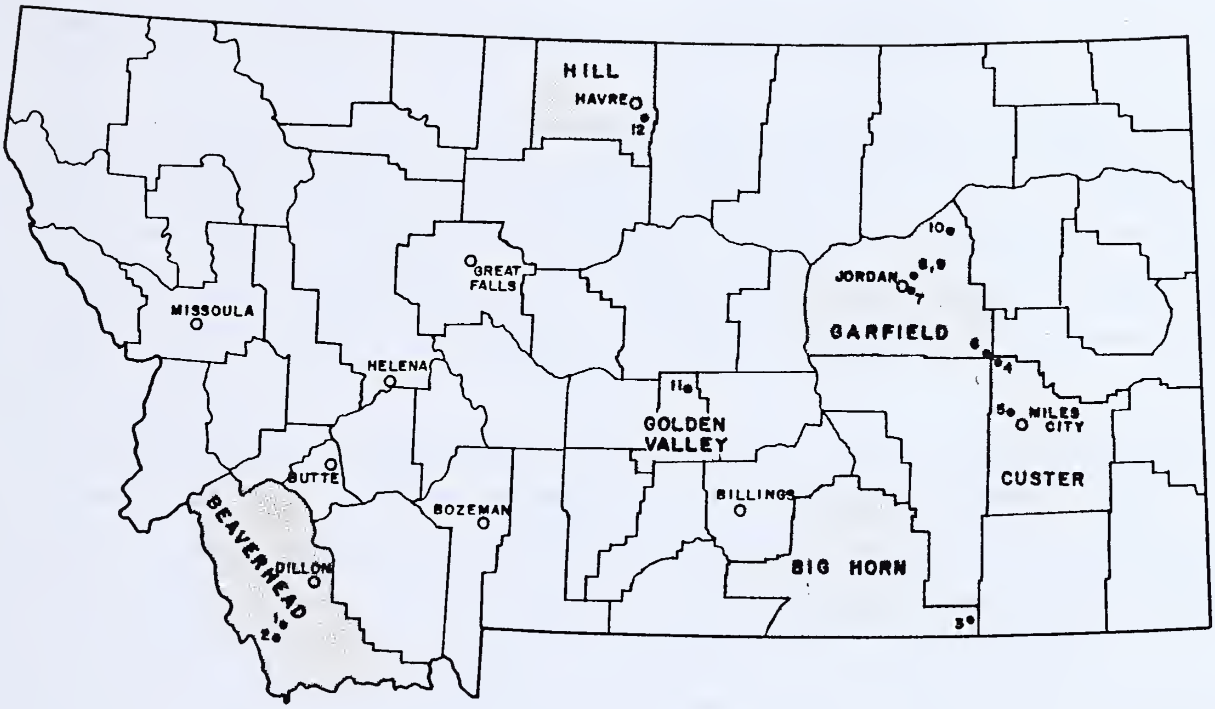
1.0 INTRODUCTION

The Montana Department of State Lands (DSL) Abandoned Mine Reclamation Bureau (AMRB) contracted with Historical Research Associates (HRA), of Missoula, Montana, to conduct cultural resource inventories of areas to be impacted by reclamation of selected abandoned coal mines throughout the State of Montana. DSL plans to reclaim the areas of these mines, primarily by removing and burying coal slack, back-filling open adits and subsidence areas, and/or removing dangerous structures or debris from the mine areas.

Cultural resource work in the reclamation areas included inventory and evaluation of the mines and a pedestrian inventory of the lands adjacent to reclamation areas to locate indications of other cultural resources (unrelated to mine development) that have the potential to be impacted by reclamation activity. This report presents results of field surveys for the following proposed reclamation sites:

(1) Ames and Peterson project areas in Beaverhead County;
(2) the Lloyd project area in Big Horn County;
(3) the Sunday Creek and Hay Creek 30 project areas in Custer County;
(4) the Pike's Peak, Earl Lane, Robert Lane, Haxby, and Chalk Butte project areas in Garfield County;
(5) the Cameron Creek project area in Golden Valley County; and
(6) the Roberts II project area in Hill County.

Figure 1 shows the locations of the project areas.



DSL Abandoned Mine Reclamation

Project areas by county:

Beaverhead
1. Ames
2. Peterson

Big Horn
3. Lloyd

Custer
4. Sunday Creek
5. Hay Creek

Garfield
6. Chalk Butte
7. Pikes Peak
8. Earl Lane
9. Robert Lane
10. Haxby

Golden Valley
11. Cameron Creek

Hill
12. Roberts II

Figure 1. Location map for 12 proposed reclamation areas included in this report.

2.0 METHODOLOGY

2.1 Pre-Fieldwork Tasks and Historic Documentation

Prior to the field inventory, HRA requested a search of the cultural resource site files maintained by the State Historic Preservation Office (SHPO) in Helena, Montana. The proposed Haxby reclamation project area is the only area with a previously recorded site in close proximity. (This site is discussed in Section 4.4.5.)

HRA personnel consulted a variety of historic documents while researching the development of individual mines. The "Bulletins" published by the United States Geological Survey (USGS) provided most of the general information regarding the quality of coal and the scale of mining in a given area. Researchers also contacted the Montana State Office of the Bureau of Land Management (BLM) in Billings, which maintains records of coal leases on all federally owned coal within the state, and the records of the DSL Minerals Leasing Division, which retains records of former coal leases on state-owned coal. These records provide the date of issue and cancellation of the permit, the name of the permittee, and other information concerning the permit process, such as the date of payment of rental and other fees. However, a number of mines have no record of a permit, either because the owner of the land surface also owned the mineral rights to the property and did not need a permit, or because the coal was mined illegally.

HRA personnel also attempted to contact people who are knowledgeable of the history of the various mines. Obviously, the most valuable information regarding mine operations was obtained during interviews with people who actually worked the mines. However, locating such individuals proved to be difficult in some cases, especially when the current landowner was unfamiliar with the development of the mines on his or her property. In such instances, HRA researchers interviewed

individuals who were only peripherally involved with the mining in a particular area.

In addition to federal and state documents and interviews with local informants, HRA researchers reviewed county land transfer records in compiling information on individual mine development. Although land transfer records do not contain specific information regarding coal mining, they can provide evidence regarding the identity of individuals who may have been extracting coal from an area at a specific time.

Several project areas, including the Haxby, Ames, and part of the Peterson project areas, are located on federal land administered by the BLM. Survey of these project areas was conducted under HRA's BLM Cultural Resource Permit No. M64185.

2.2 Field Tasks

As stated above, the purpose of the inventories of the various reclamation areas is to record and evaluate the mines to be reclaimed, and to locate other cultural resources, unrelated to mine development, that may be impacted by reclamation activity. Due to the character of mine reclamation, which typically involves ground-disturbing activities such as stripping and stockpiling of topsoil, excavation of adits, and the general movement of heavy machinery through an area, prehistoric sites are particularly at risk. Although these types of activities represent a threat to prehistoric resources, it also is in the interest of the reclamation engineer to limit disturbance to the smallest possible area, usually directly adjacent to the feature to be reclaimed. In many instances, the impact from reclamation does not exceed the area already disturbed during development of the mine.

Because of the vulnerability of prehistoric sites, field work included a pedestrian inventory of the potential impact area. The extent of these survey areas varied on a project-by-project basis, depending upon the information available to HRA at

the time of the field inventory. In some cases, the engineer already had prepared a preliminary reclamation plan, with a map showing the location of individual features to be reclaimed and a boundary line indicating the extent of surface disturbance expected to result from reclamation. In such cases, the area of field survey was limited to the boundaries identified by the engineer. In other instances, the HRA field crew made the first contact and had to define the survey area in the field. In these cases, crew members surveyed a generous area that would accommodate a wide range of reclamation activities, including the need for "borrow" areas for acquisition of topsoil. Generally, the HRA field crew surveyed an area within 100-150 meters (300-450 feet) from mine-related features (i.e., subsidence holes, adits, etc.). In cases when the engineer indicated that additional access to the area may be necessary, the crew inventoried the proposed access corridor, which usually is 100 meters in width. The HRA field crew surveyed areas of potential impact in approximately 30-meter transect intervals, and all areas of subsurface exposure in the area were examined for indications of buried cultural remains.

In-field documentation of both historic and prehistoric sites included preparing a sketch map of the site (when the engineers had not already prepared a site map), photographing individual features and the overall site area, and conducting subsurface testing of prehistoric site areas. Subsurface testing was conducted only if it appeared that the site could not be avoided during reclamation work. Generally, 50x50-cm or 1x1-m test units were excavated in arbitrary 10-cm levels, and the fill screened through 1/4-inch wire mesh. The results of testing for specific sites are included in the discussion of the appropriate project areas in Section 4.0, "Results of Field Work."

Project area surveys were conducted during the months of June, July and August 1987. Janene Caywood directed the field work and was assisted by crew members Bill Hay, Ted Catton, Douglas Melton, and Vickie Varnum.

3.0 CULTURAL CONTEXTS

3.1 Prehistory

Human occupation of the area now identified as the State of Montana spans the last 12,000 to 14,000 years. Previous research has shown that the pattern of human culture exhibited at a given time in a given place is dependent upon such variables as climate, the composition and density of game populations, the state of technological development, and the state of intergroup relations between different human populations. None of these variables are static, and all interact to create an ever-changing picture of cultural responses to the environment in which people find themselves.

Since technological change is best represented in the archaeological record, anthropologists use changes in technological manifestations (i.e., tool types) to mark the boundaries of culture change and the major prehistoric periods. Although it is often implied that similar technologies reflect similarities in other realms of culture, this is not necessarily the case.

Few of the cultural resource sites located during the course of the field surveys for the project areas discussed in this report date to the prehistoric period and, unfortunately, none of the sites yielded temporally diagnostic material. The following brief cultural chronology of the prehistoric period in Montana is generalized, and does not attempt to explain adaptations to specific regions within Montana.

The Early Prehistoric Period (ca. 13,000-5500 B.C.) represents the earliest known human occupation of the area. The period's technology is characterized by the presence of large, lanceolate spear points in a variety of styles. Early Prehistoric human groups appear to have depended heavily upon the exploitation of large herd mammals. Although the exploitation of large game animals appears to have been important to these early

inhabitants, a variety of plant and animal foods probably were utilized.

The Middle Prehistoric Period (ca. 5500 B.C.-A.D. 400) is divided into three temporal segments: Early Middle, Middle Middle, and Late Middle. The Early Middle Period (5500-2500 B.C.) is characterized by the appearance of large, side-notched projectile points, which are believed to mark the transition between the use of hand-thrown spears and the use of a spear thrower (atlatl). Although little is known of the subsistence strategies of people from this time period, it is believed that they depended upon a wider variety of plant and animal species for subsistence that people living during the Early Prehistoric Period.

The Middle Middle Period (ca. 2500-1000 B.C.) is characterized by a range of projectile point forms, including lanceolate forms with indented bases (McKean), stemmed forms with sloping shoulders (Duncan type) and by later forms with distinct shoulders and expanding stems (Hanna). The first two types, McKean and Duncan, represent McKean Complex materials and come from sites that appear to cluster between 2500 and 1500 BC. McKean Complex points typically are found in association with the butchered bones of large mammals. Hanna points appear later in the Middle Middle Period, and it has been suggested that these types of points represent an early phase in the development of a cultural tradition based upon the almost exclusive use of bison (Reeves 1960).

The first part of the Late Middle Period (ca. 1000 B.C.-A.D. 400) is characterized by the appearance of corner-notched projectile points, typically referred to as Pelican Lake points. Subsistence data from Pelican Lake sites reflect an orientation towards bison procurement. By A.D. 400, a new projectile point style, referred to as Besant, had appeared. The Besant point type has broad, shallow, side notches, and some specimens exhibit basal grinding. Because these types of points have been found in association with bison kills employing the use of man-made corral

structures or natural traps, it has been suggested that Besant points represent the remains of human groups who specialized in bison procurement.

The Late Prehistoric Period (ca. A.D. 200-1700) is marked by a reduction in the size of projectile points, which is interpreted as reflecting the change from the use of the spear thrower to the bow and arrow. There are many styles of small arrow points, and some seem to reflect preferences of human groups in specific geographic localities. The earliest identifiable arrow point from sites in the Northwestern Plains is referred to as Avonlea. Avonlea points are small, finely made, triangular points, with side notches set low on the blade and with slightly concave bases. Many sites containing Avonlea points have been associated with bison procurement or bison processing, suggesting a primary reliance upon big game hunting. Later point types characteristic of the this period include Prairie Side-Notched and Corner-Notched forms, and Plains Side-Notched forms.

The Protohistoric Period (ca. A.D. 1700-1800) coincides with the introduction of the horse into the region. Adoption of the horse brought about changes in many aspects of prehistoric cultural patterns, increasing mobility and contact between different ethnic groups. Archaeologically, this period is usually characterized by the presence of European trade items, such as beads, bangles, and iron projectile points.

3.2 Historic Period Coal Mining

The DSL AMRB has contracted for cultural resource inventories of proposed reclamation areas for the past six years. During this time, much has been written regarding the history of coal mining in Montana. Past researchers have made a distinction between large commercial mines and small wagon mines. The former supplied coal to a variety of markets, with an emphasis on the railroad and mining industries. The latter served individual

families, small groups of individuals living in close proximity to the mine, or, sometimes, small urban communities. All of the mines discussed in this report are categorized as small wagon mines.

Mining of locally available coal for domestic fuel needs has been a necessity for as long as there have been settlers in the Northwestern Plains. This pattern of resource utilization extends beyond state boundaries, and should be considered a regional pattern with a geographical distribution that depends not only upon the presence of coal-bearing geologic formations, but also upon the absence of other adequate fuel sources. The dependence upon wagon mines for coal was greatest in central and eastern Montana, although small local coal mines are found in lesser frequency throughout other areas of the state. The following excerpt from a 1906 USSG Bulletin aptly describes the reliance upon coal in the eastern part of the state:

> Besides the larger mines on or near the railroads there are hundreds of localities all over the area where lignite is mined on a larger or smaller scale. Throughout the greater portion of the area lignite is the only fuel used and the ranchmen occasionally haul it 10 or 15 miles. Usually, however, there is a seam near by from which a supply can be obtained. It is generally taken from an outcrop where it can be gotten with the least amount of labor. When the seam lies near the surface the lignite is reached by stripping, or if it is exposed in a cut bank or steep bluff it is removed from the face of the outcrop with the pick or by blasting (Leonard 1906:330).

Although this passage was written to describe the area around Miles City, it applies to many areas within the central and eastern parts of the state.

A key phrase from the passage quoted above is "with the least amount of labor." For coal lying near the surface, the overlying dirt (or overburden) was either blasted or picked away, and the coal removed from the horizontal extent of the exposed coal seam. Typically, miners used a team of horses pulling a scraper to dislodge the coal, which was then loaded into a customer's wagon or truck for transport to the residence.

Another method was to use a "slip," a kind of small bucket pulled behind a team of horses. One person guided the team and another guided the slip by walking behind it and holding onto its two handles. According to Mr. Ken Fogel (1987), a resident of the Haxby area, scrapers were easier to use because one did not have to bend over while guiding them, and they dislodged more coal in one pass than did a slip.

"Undermining" involved tunnelling an entry into the coal seam and, usually, using black powder to blast out the coal in rooms off the entryway. Once the coal was loosened by the blasting, it could be picked out and transported to the mine entrance. Rooms were usually 10-12 feet in width, with pillars of free-standing coal left in between to support a coal roof. Relatively few individuals timbered the interior of their mines, which sometimes caused tragic consequences.

Besides cave-ins, there were many other dangers associated with the undermining method of coal extraction. The use of black powder for blasting posed a variety of hazards, and the coal dust suspended in the mine after an explosion created a volatile atmosphere. The safety of any mine depended in part upon the skill and experience of the miner working it, and also upon the type of ventilation system or equipment used.

Some wagon mines, usually those mined for the small scale commercial sale of coal, had interior tramway or rail systems. Coal cars were hauled either by hand or with horses, or sometimes by using small gasoline-powered generators to operate a pulley. Although some coal seams lie at ground level, many are inclined, and miners with tramways used gravity to move loaded cars out of the mine and empty cars back to the interior of the mine.

Generally, wagon mines were only operated during the winter, when the demand for fuel was greatest. An individual, or sometimes a small group, would obtain a lease to mine state- or federally owned coal from a particular locality, although this formality was often ignored. Miners either lived at home and commuted to the mine, or stayed in a shelter at the mine site.

The shelters found at wagon mines usually are not elaborate, having been built to meet the minimal needs of one or two individuals for shelter and cooking facilities.

The importance of local mines to people living in rural areas should not be underestimated. Presuming that the basic needs of shelter and food are at least minimally available, fuel for domestic and agricultural tasks represents the next most critical human need. The ready availability of coal to satisfy this need promoted the settlement of many areas of the open plains.

In addition, coal mining was used by many individuals to augment their income from farm and ranch work, especially during the 1930s, when money and credit were scarce. It appears that the operators of many wagon mines were viewed by themselves and their neighbors as primarily farmers and ranchers. The demand for coal fluctuated on a seasonal basis, being highest during the winter when the demands of agriculture typically are few.

Wagon mines are an integral part of the settlement and development of rural Montana and of the Northwestern Plains region in general. Products of these mines fulfilled a basic need of homesteaders and people living in small communities throughout Montana and, thus, small scale coal mining represents a historically significant pattern of human activity.

4.0 RESULTS OF FIELD WORK

The surveyed project areas are scattered throughout the southwestern, south-central, and eastern parts of Montana, and the following site narratives are presented by county. Each section provides:

(1) a description of the project area(s);
(2) a brief discussion of coal mining history in the county;
(3) a discussion of the cultural resource sites recorded during survey of the project area;
(4) an assessment of the National Register eligibility status of the recorded sites and the potential impact of proposed reclamation upon the sites; and
(5) recommendations concerning measures that may be required to mitigate adverse affect to significant sites.

4.1 Beaverhead County Reclamation Sites: Ames and Peterson Project Areas

Both the Ames and Peterson project areas are located high in the Medicine Lodge Creek drainage, a tributary of the Beaverhead River (Figure 2). The Medicine Lodge Creek drainage is located between the Tendoy Mountains on the east and the Beaverhead Mountains on the west. The geological sediments found in the drainage are undifferentiated sedimentary deposits that date to the Tertiary. Lignite is localized in lenses throughout the area (Montana Bureau of Mines and Geology 1958).

The bottom of the drainage is fairly wide and level, and currently is used primarily for agricultural purposes. The lower hill slopes above the bottom lands are almost entirely covered with sage brush, possibly the result of past grazing abuses. Mixed fir forests with isolated pockets of aspen are located on the middle to upper hill slopes, which rise abruptly from the

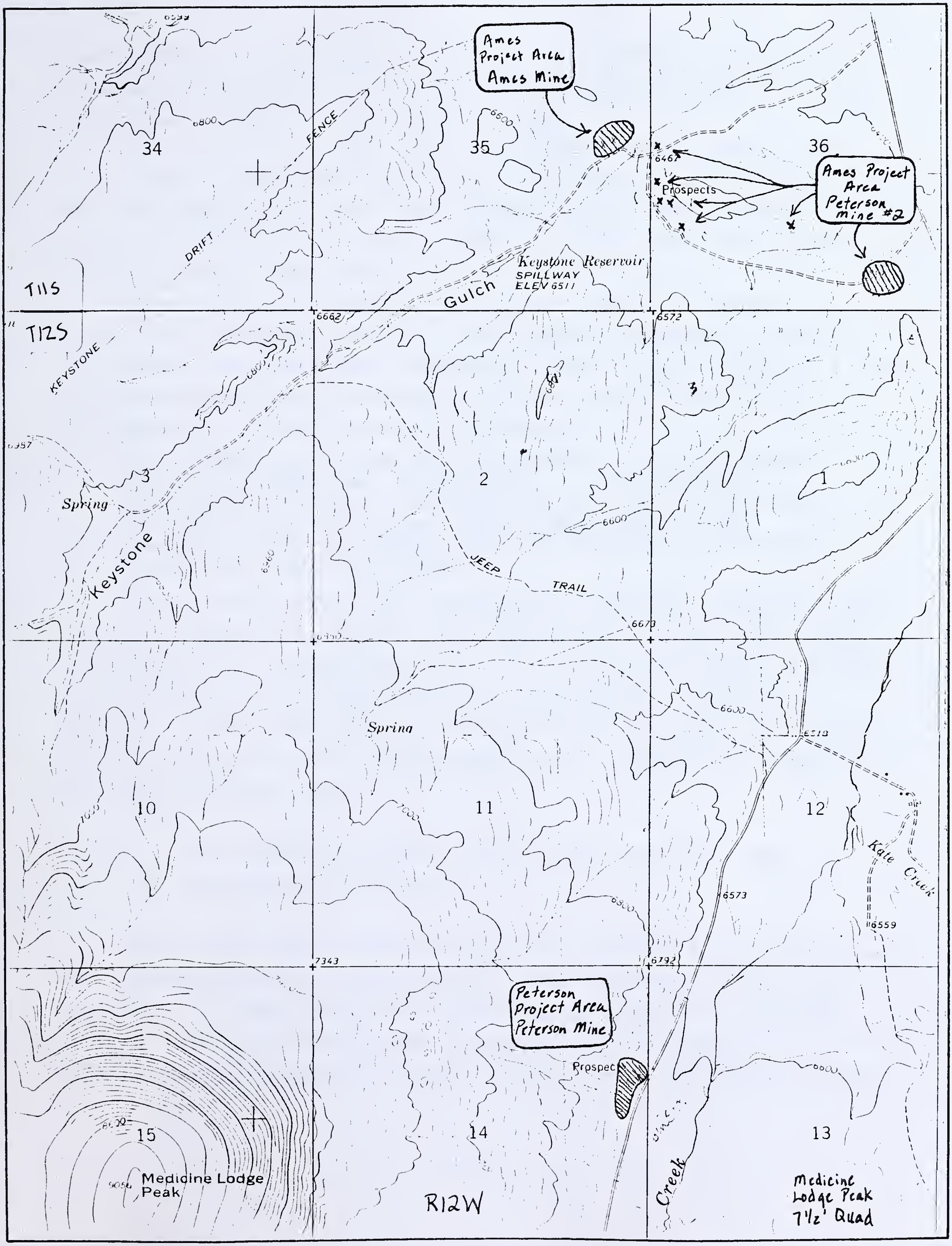


Figure 2. Map showing Ames and Peterson project areas, Beaverhead County.

valley floor at the head of the drainage. Bands of riparian vegetation, including willow and other shrubs, are found in the drainages adjacent to the creek bottoms.

Both of the project areas are located at the base of the east slope of Medicine Lodge Peak, the highest point in the area. The Peterson project area lies farther south than the Ames project area, and is directly adjacent to the east side of the Medicine Lodge Creek Road.

Apparently, coal mining was not as common an activity in this area of Montana as within the central and eastern parts of the state. The earliest reference to coal in the vicinity of the two Beaverhead County reclamation areas, comes from a 1906 publication of the University of Montana:

> The second area known as the Medicine Lodge and Horse Prairie Lignite Beds is located ... 25 to 30 miles southwest of Dillon. The fuel is lignite and the seam varies from three to ten feet in thickness. The percent of ash is rather high and the material has not been much used (Rowe 1906:31).

Very little additional information was found regarding coal mining in Beaverhead County other than that received from local informants. It appears that the coal mined in the area was used primarily for local consumption and small scale commercial mining. A 1950 USGS Bulletin mentions only one small commercial mine on the east side of Beaverhead County, within the Ruby River drainage (Klepper 1950).

4.1.1 The Peterson Project Area: Site 24BE1334, Pete Peterson's First Mine

The single mine located within this project area is known as the Peterson mine or, specifically, Pete Peterson's first mine (Figure 3). (Pete Peterson's second mine is part of the Ames project area and is discussed in Section 4.2.) Features 1, 2 and 3 are directly related to mining and are located together on the

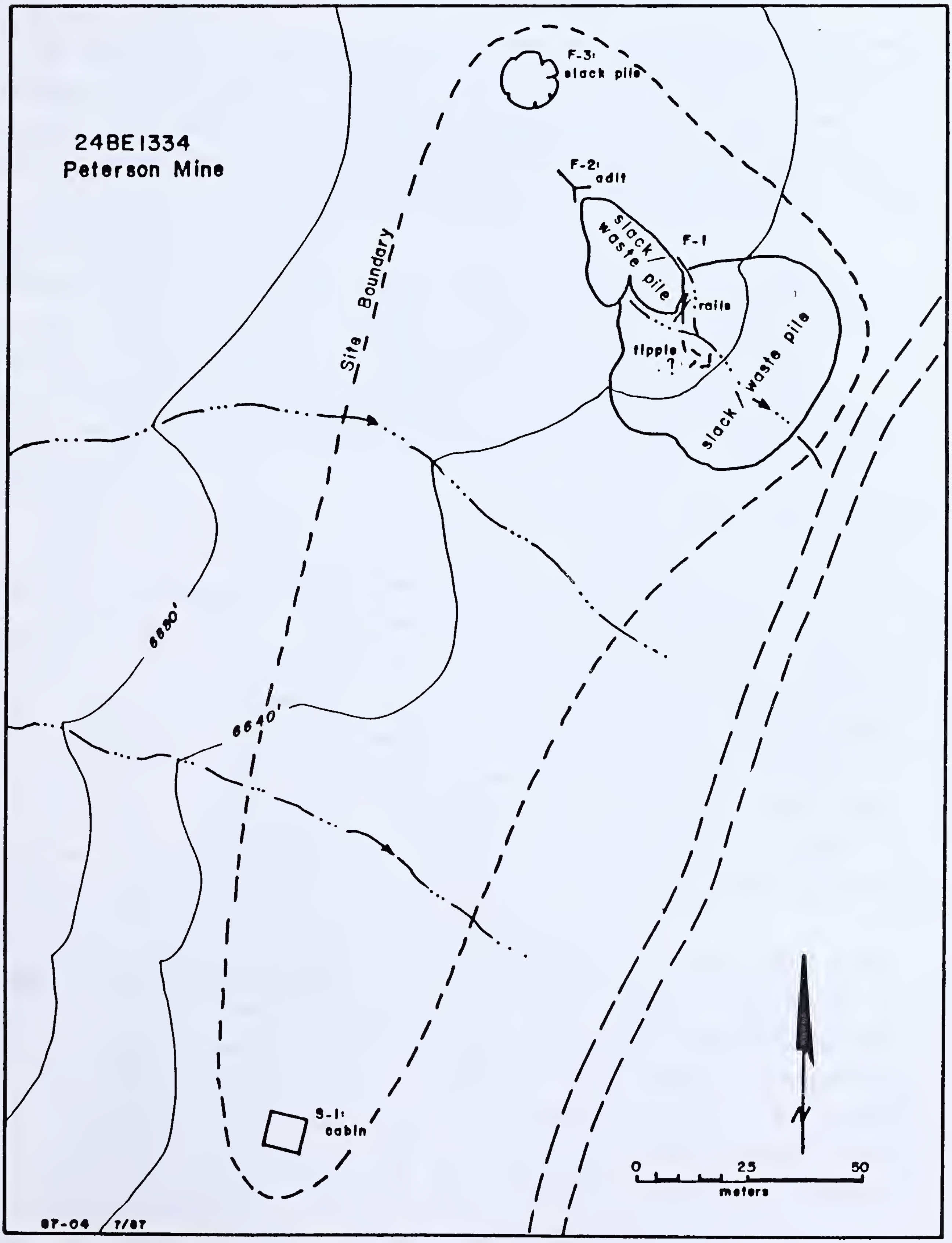


Figure 3. Plan map of site 24BE1334, Pete Peterson' first mine.

side of two small, intermittent tributary drainages of Medicine Lodge Creek. Feature 1 is a large waste pile (Figure 4). A few pieces of scattered lumber on top of the slack pile may represent the remains of a tipple. Immediately behind the coal slack pile is Feature 2, an adit and collapsed tunnel (Figure 5). The remains of three timber sets are still visible, and consist of log uprights and crosspieces. The sides of the tunnel were lined with small-diameter poles.

Slightly upslope and to the north is Feature 3, another small area containing coal slack. There is only a small amount of material in this pile, and whether or not it marks the location of another adit is unknown. The slope behind the feature appears to be slightly disturbed, perhaps as the result of subsidence.

A small, one-story log structure is found approximately 200 meters south of the mine workings on the south side of the two intermittent drainages described above. Structure 1 has a shallow gable roof, at one time covered with poles and sod (Figure 6). The notches are "V"-shaped saddle notches, and are axe-cut. The walls appear to have been originally daubed with mud, and subsequently with cement. Interior walls are chinked with quarter cut poles. The east elevation has a door and a window opening. Currently, no foundation is visible, but this may be due to soil accumulation around the structure's base. Generally, this structure appears to be in fairly good condition, although the roof is beginning to deteriorate.

Historical Development. The site features represent the remains of a mine operated during the late 1920s. Samuel F. Bates obtained a federal coal prospecting permit for the area that contains site 24BE1334, in February 1927 (Coal Prospecting Permit, Serial No. G.F. 067528). Two other people, L.A. Latham and L. Peterson, apparently had an interest in the permit since they, along with Bates, filed a bond with the National Surety (?) Company in 1928. In 1929, after the death of Samuel Bates, Lawrence Peterson applied for a coal permit in the same area, and

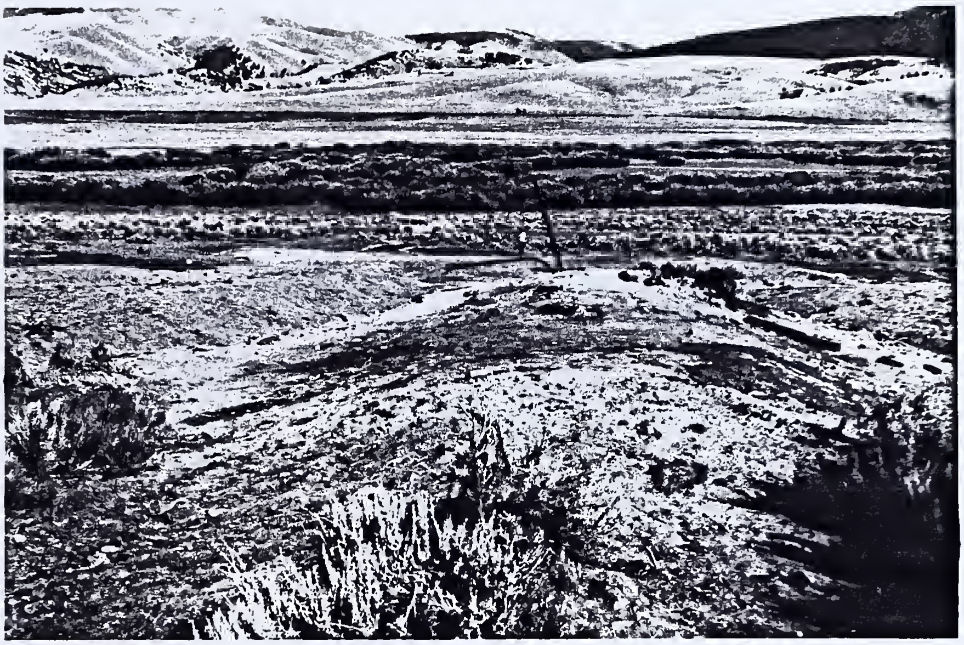


Figure 4. Looking east over Feature 1, the waste pile at site 24BE1334.

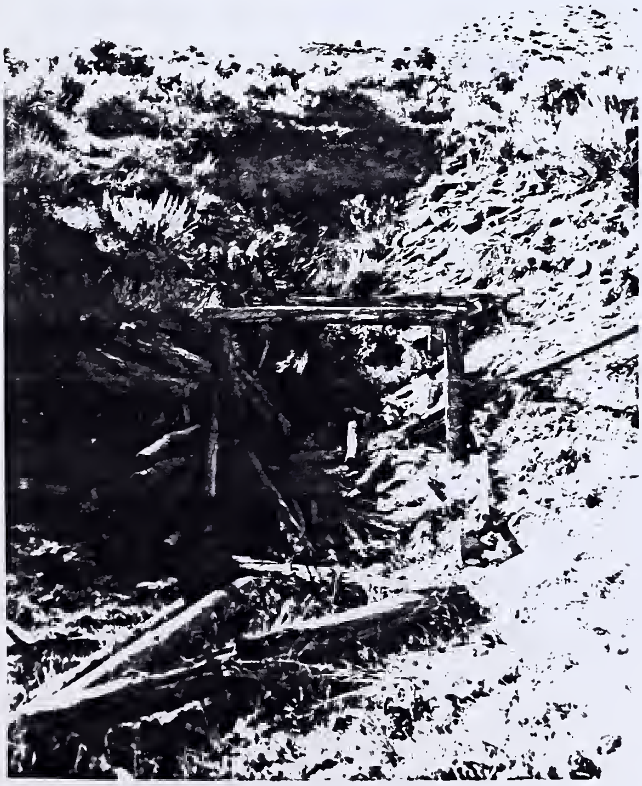


Figure 5. Looking west to Feature 2, the adit and collapsed tunnel at site 24BE1344.

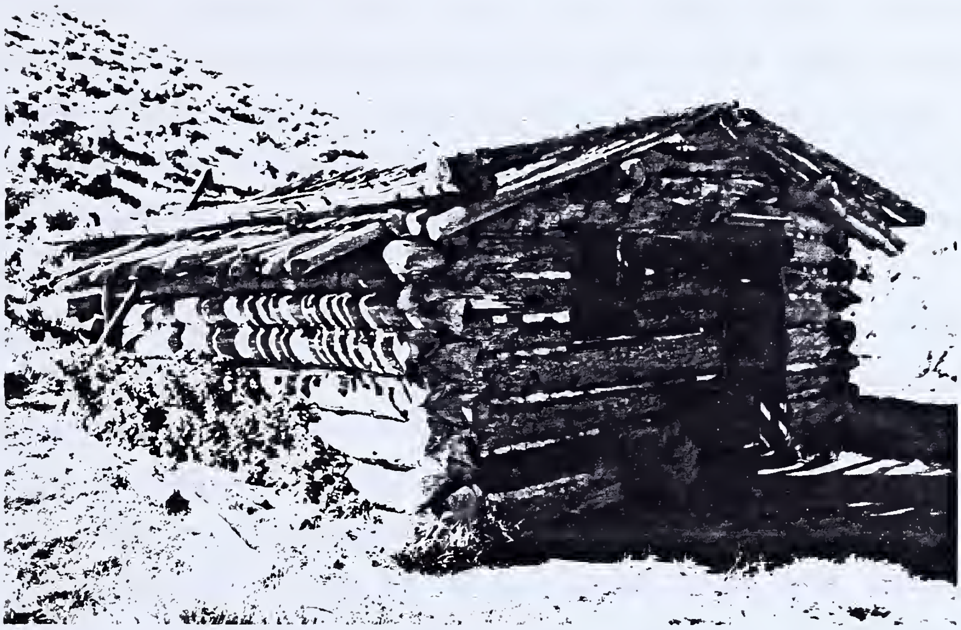


Figure 6. South and east elevations of Structure 1, located south of the mine workings at site 24BE1344.

eventually the government issued a new permit under his name (Coal Prospecting Permit, Serial No. G.F. #075212).

This site is identified locally as the first Peterson mine. Apparently, the Peterson family began the work at this mine in the late 1920s. Whether or not Bates was involved in the development of the mine is unknown. Although the permit was issued to Lawrence Peterson, local informants indicate that Pete Peterson (Lawrence's younger brother) and Pete's son Mick were the primary people involved in mining at this site (Hildreth 1987; Peterson 1987).

The coal seam at this location slopes upwards to the west. The Petersons used a horse to pull empty coal cars into the mine along an interior tramway. Loaded cars simply rolled out of the mine (Hildreth 1987). Local resident Mr. Gene Hildreth thinks that the Petersons used Structure 1 as a dwelling, but later added another wood frame structure, which has since been moved.

Whether or not Structure 1 was located at the site prior to the Peterson family's use of the area for a coal mine is unknown.

The Petersons abandoned this mine in the early 1930s when the coal seam diminished. The family then moved their mining operation north to another prospect area. (The Peterson's second mine is included in the Ames project area and is discussed below.)

Evaluation and Recommendation. Site 24BE1334 does not appear to be eligible for nomination to the National Register of Historic Places. The site remains do not possess any architectural or engineering significance, nor are they related to people or events of significance to the local area, state, or region. Although the site is associated with the historically important pattern of small-scale coal mining, the site remains do not retain enough integrity to be considered to be representative of this type of activity.

Reclamation work at this mine will consist of removing the coal slack pile, in-filling the adit, and reseeding and mulching any disturbed areas. The cabin located south of the main workings of the mine (Structure 1) will not be affected during reclamation. We recommend that no further work be conducted at this site.

4.1.2 The Ames Project Area

The Ames project area contains two mines to be reclaimed, recorded as sites 24BE1333 and 24BE423. During the field review of the project areas, Bob Braccio of Spectrum Engineering, Inc., suggested that additional access may be required in order to complete the reclamation at site 24BE1333. Therefore, the HRA inventory area for the Ames project includes not only the areas adjacent to the two mines to be reclaimed, but also a 100-meter-wide corridor leading southwest from the east edge of site 24BE1333 to the main Medicine Lodge Creek Road (Figure 7).

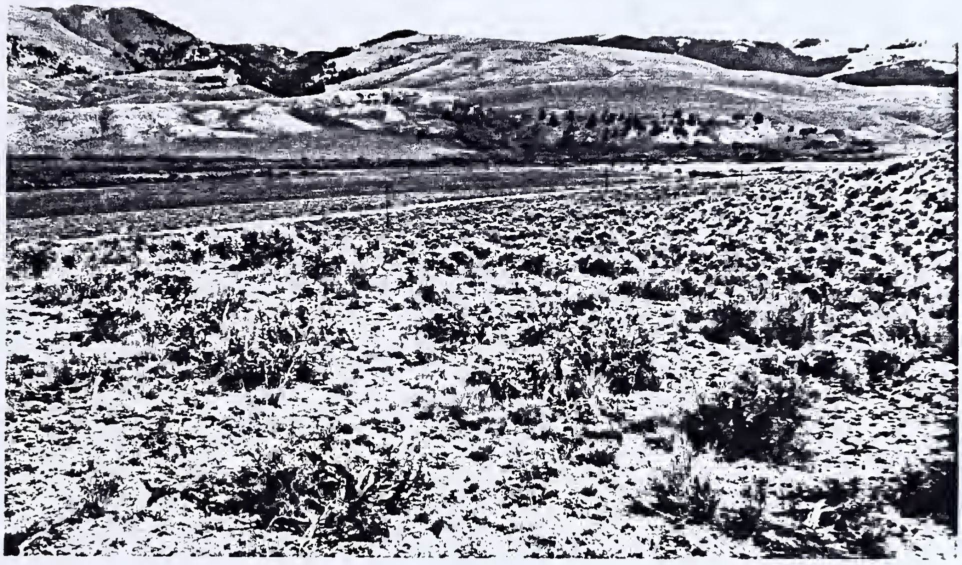


Figure 7. Overview of Ames project area inventoried for transportation corridor.

In addition to the two coal mines (24BE1333 and 24BE423), one prehistoric isolate (discussed in Section 4.1.2.2) was located during inventory of the road corridor. Figure 8 shows the location of the area surveyed for the new access and the location of the isolated find.

4.1.2.1 Site 24BE1333, Pete Peterson's Second Mine

Site 24BE1333 represents the remains of Pete Peterson's second mine. A variety of structures and features were observed at this site, some of which are associated directly with the coal operation and some that represent the living quarters of the mine operators (Figure 9). Mrs. Dorothy Peterson (1987), wife of one of the men who operated the mine, identified the function of some of the site remains.

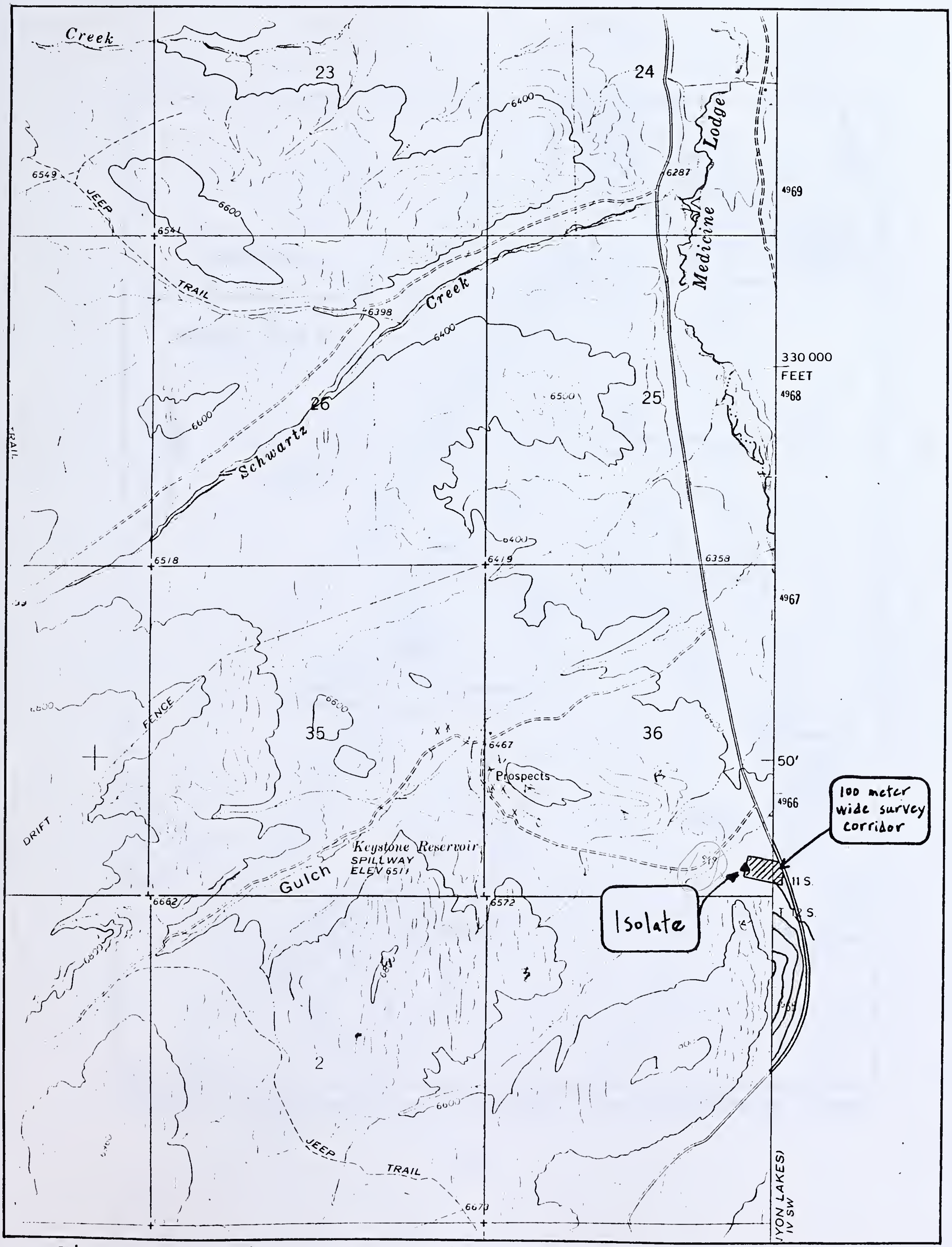


Figure 8. Section of topographic map showing location of the new access corridor and the prehistoric isolate.

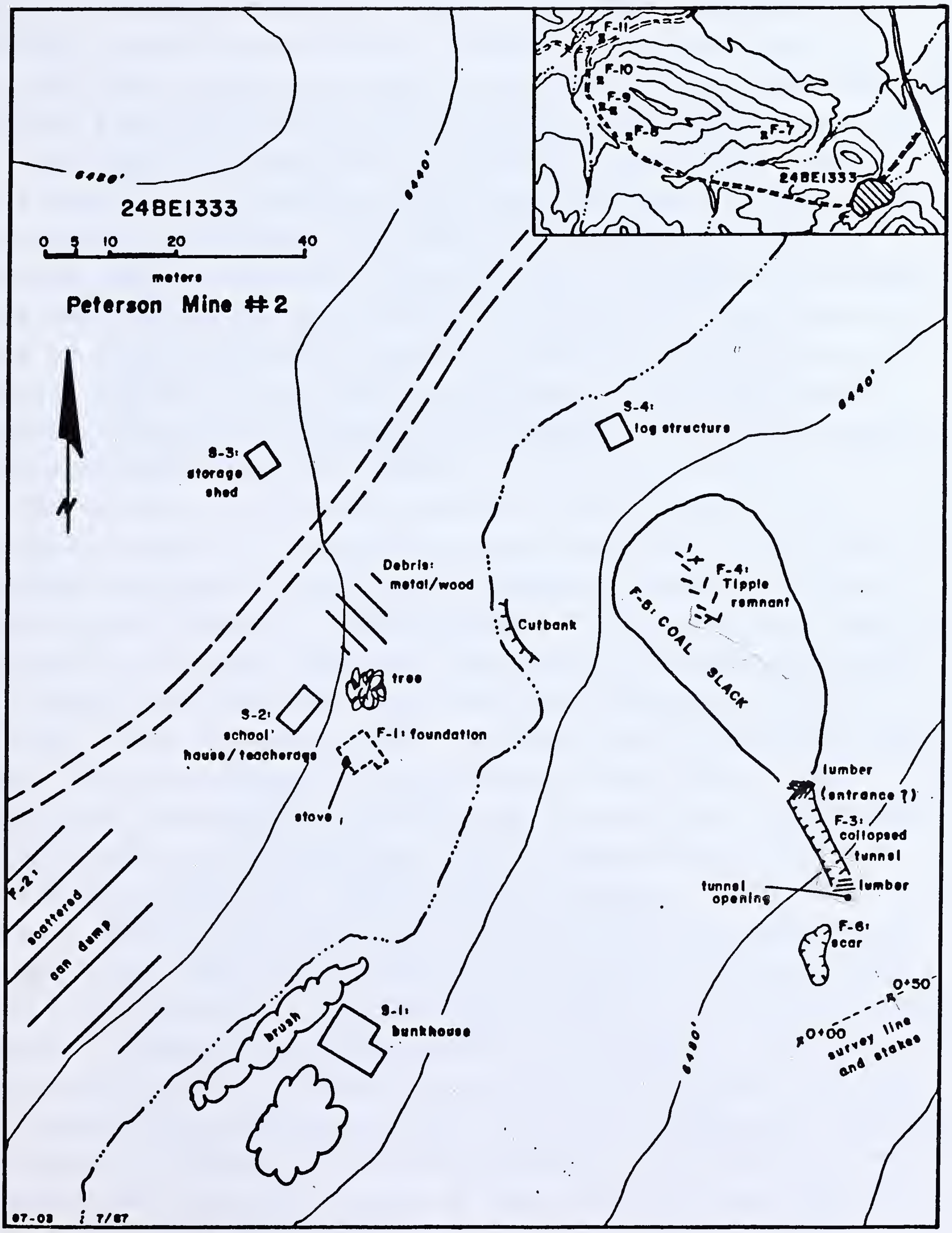


Figure 9. Plan map of site 24BE1333, Pete Peterson's second mine.

Structure 1 is the remains of the bunkhouse built by the Petersons for mine employees (Figure 10). The bunkhouse is a one-story, roughly constructed, rectangular log and pole structure with a shed-style roof. It is built with unpeeled logs (possibly lodge pole pine) and the round saddle notches are axe-cut. The roof is covered with vertically nailed tongue and groove boards. The exterior walls are daubed with a mixture of what appears to be cement and small gravel, and the interior walls are chinked with quarter-cut poles. A doorway is located in the east elevation, and the north elevation at one time had a series of fixed or sliding windows. The west half of the south elevation appears to have had an attached log crib enclosure. Currently, there is no indication of whether or not this portion of the structure ever had a roof.

The interior of the main portion of the structure is partially divided by a floor-to-ceiling partition. Structure 1 is located adjacent to the channel formed by the runoff from a spring located upslope. Cattle grazing in the area have used the structure for shelter, and have trampled the drainage bottom so that willows now crowd the north and west elevations of the structure. Mrs. Peterson (1987) indicated that, during the time of use, the area adjacent to the structure was drier. The drainage was undisturbed by cattle and thus was more channelized.

Structure 2 is a one-story, wood frame building with a gabled roof (Figure 11). The building currently rests on a sandstone slab and log foundation and has obviously been moved into the area. The exterior walls are covered with horizontally placed ship-lap siding, and the roof is covered with sawn wooden shingles. A single, fixed-pane window is located in each of the east and west walls. The north elevation has two one-over-one lite, double-hung windows with two, two-lite, fixed pane windows in between. A doorway in the south elevation is offset to west of center, and the west portion of this elevation has fallen to the outside of the building.

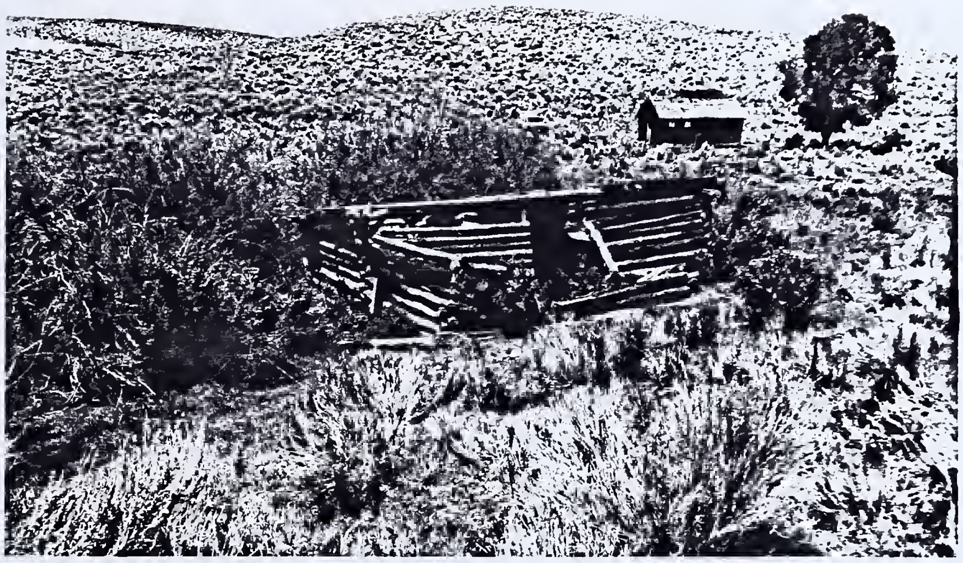


Figure 10. South and west elevations of Structure 1, the bunkhouse at site 24BE1333.

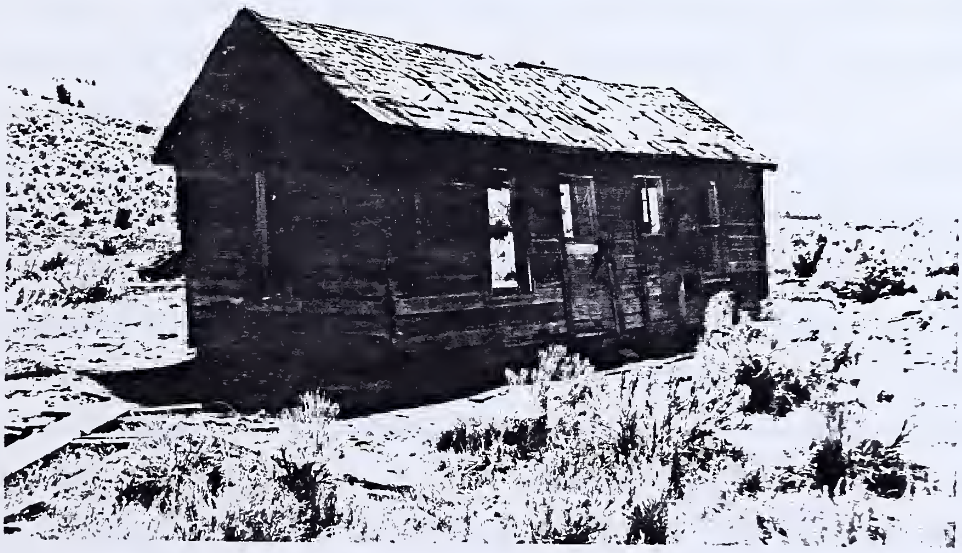


Figure 11. East and north elevations of Structure 2, the schoolhouse/teacherage at site 24BE1333.

The Peterson family moved this building onto the property for use as a schoolhouse and teacherage. The interior was divided into two rooms, one for the school room and one as a sleeping room for the teacher. For the most part, the Peterson's five children were the only students at the school. However, a child from a neighboring ranch sometimes took lessons at this location (Peterson 1987).

Feature 1 lies immediately south of Structure 2 and consists of the remains of a foundation and a board floor (Figure 12). Scattered boards and debris covers and surrounds this feature, including a pair of ladies' leather shoes, crockery fragments, enameled tin ware, barrel rings, and a wood cook stove. Dorothy Peterson indicated that her husband and father-in-law built a substantial log home for the family at the site. However, the Petersons sold the building some time ago, and the purchasers removed it to another site for use as a summer home. Feature 1 probably represents the foundation for this log dwelling (Peterson 1987).

Feature 2 is a trash dump, located southeast of the main living area of the site. It contains a wide variety of debris, consisting of canned milk cans, medicine bottles, quart and gallon tin cans, canning jars, and a variety of wood and board debris, including what appear to be portions of collapsed board structures dumped in the area.

Structures 3 and 4 are both small, one-story log buildings, located north and east of the main living area of the site. Structure 3 lies on the north side of the drainage and the access road to the site. This rectangular structure has a shallow gable roof, once covered with boards and sod (Figure 13). Portions of the roof have begun to collapse into the interior of the building. The exterior walls are daubed with mud and chinked with poles. The "V"-shaped saddle notches appear to have been cut with an axe. No foundation is visible at present, but it may simply be covered by soil accumulation around the bottom of the structure. The south elevation contains the only entryway, and

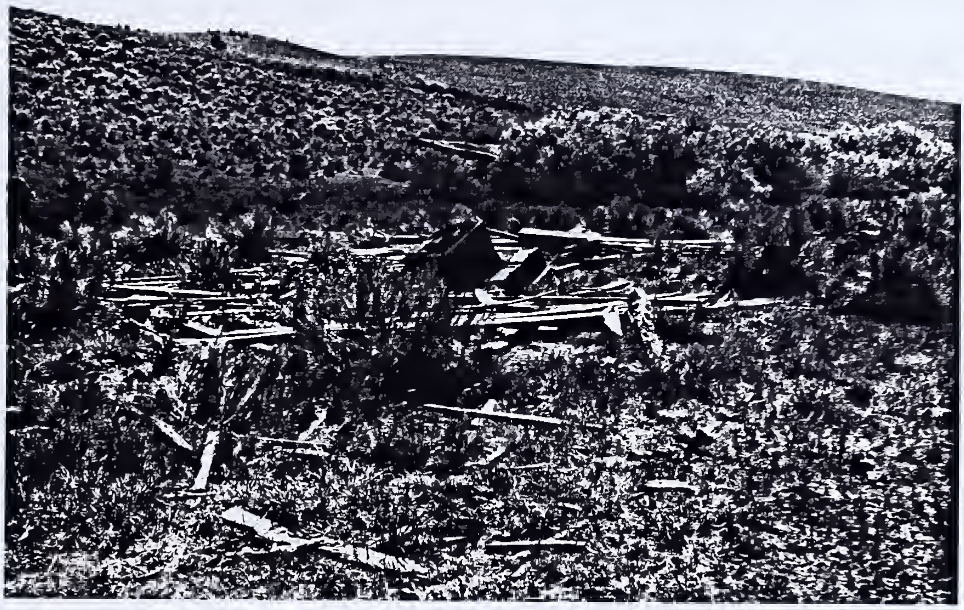


Figure 12. Feature 1, foundation and board floor at site 24BE1333.

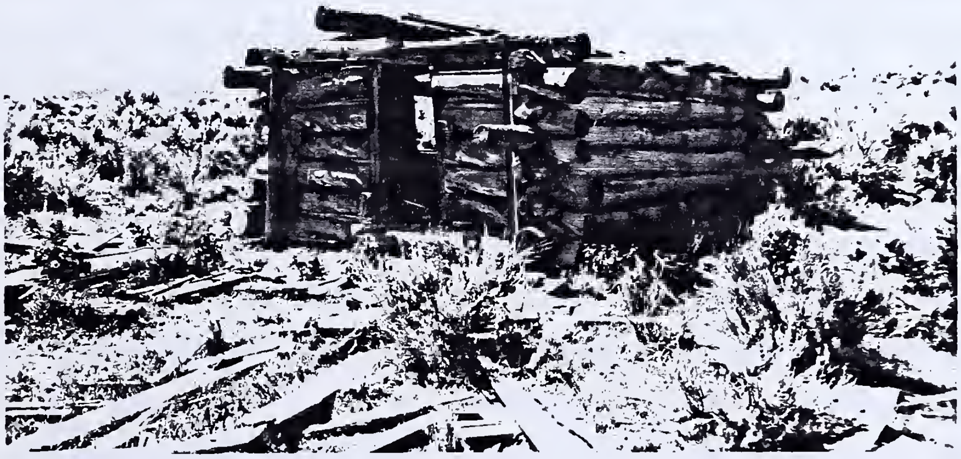


Figure 13. South and east elevations of Structure 3 at site 24BE1333.

may have had a porch overhang. A single window opening is found in the north elevation.

Structure 4 is a one-story log building with a gabled roof. The roof covering consists of boards overlaid with sod. The walls are daubed with mud and chinked with poles, and the "V"-shaped saddle notches are axe-cut. The east elevation contains a single window framed with boards, and the south elevation contains the only doorway to the structure, which has sandstone slabs forming a threshold to the entrance (Figure 14). All of the nails observed in the structure are round wire nails. Like Structure 3, no foundation is visible at Structure 4, but it may be hidden by soil accumulation around the structure's base.

According to Dorothy Peterson (1987), one of the log structures (Structures 3 and 4) was built before her father-in-law began operating the mine at this location. She indicated that the family used the building to store extra groceries and supplies. However, Peterson did not remember two log structures at this location in addition to the house sold by the family (Feature 1). Judging from the degree of deterioration of the two buildings, Structure 3 appears to be the older of the two, and may be the one referred to by Mrs. Peterson as a storage house. Also, it is located closer to the former location of the main dwelling (as represented by Feature 1), and would have been a more convenient location for a storage house. Structure 4, located adjacent to the mine workings, may have been more directly associated with the mining operation.

Features 3, 4, 5, and 6 are all directly related to coal extraction and represent the first area in Section 36 to be mined by the Petersons. Feature 3, an adit and collapsed tunnel, represents Peterson's first entry into the coal underlying Section 36 (Figure 15). Mrs. Peterson (1987) indicated that her husband removed coal from the mine with the use of a small, gasoline-powered hoist. The hoist drew the coal cars up the mine slope along a tramway extending from the interior of the mine to a tipple and coal dump. The tunnel has collapsed, and

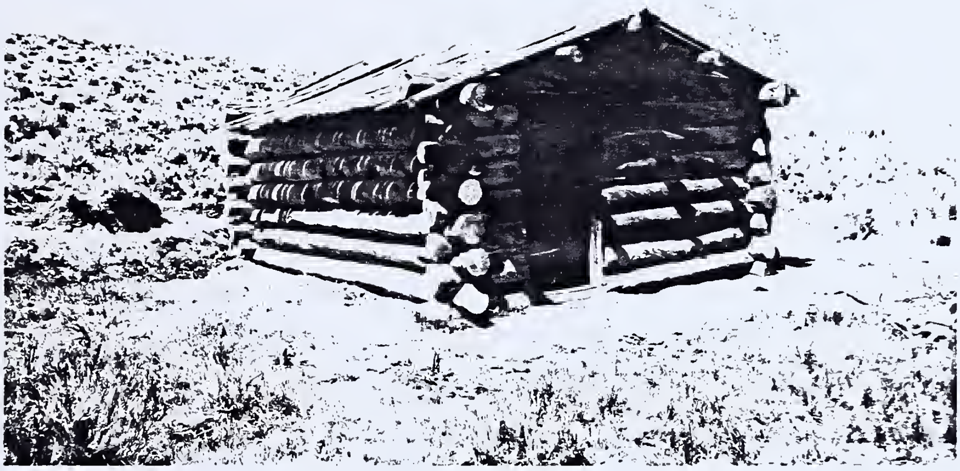


Figure 14. South and west elevations of Structure 4 at site 24BE1333.

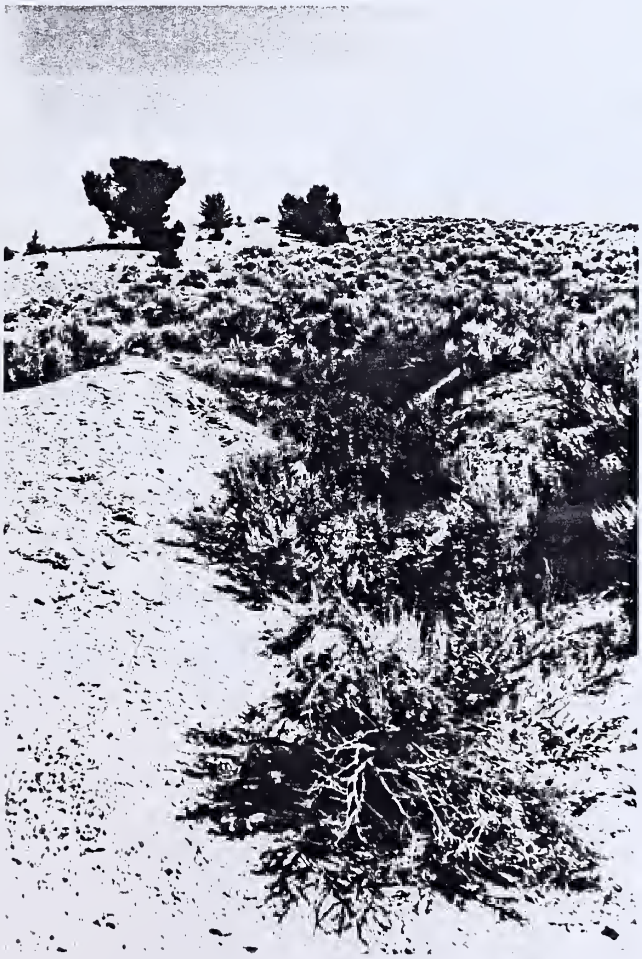


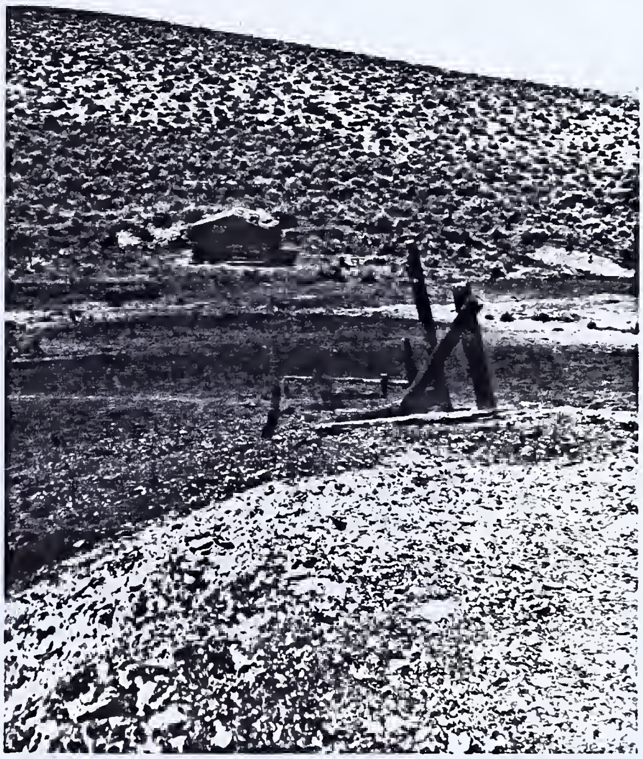
Figure 15. Feature 3, subsidence area over tunnel at site 24BE1333.

there is no longer any sign of the track leading into the mine. Similarly, the tipple has been destroyed. The only indication of its presence is a series of log and timber supports (Feature 4). The coal slack pile (Feature 5) surrounds the base of the tipple (Figure 16). Feature 6 is a small, shallow depression located slightly upslope from the collapsed tunnel. This may simply be an area of subsidence over an underlying coal room.

Five features are located at intervals along the slope and base of a small ridge located northwest of the main site area containing the structures and features described above (see inset in site map). Feature 7 consists of a small pile of coal slack, perhaps little more than a prospect. It is located just below the crest of the ridge, less than a quarter of a mile from the main site area. Features 8, 9, and 10 all are adits with associated tailings piles and trash (Figure 17). These are located about one-half mile from the main site area and represent different entries into the coal underlying Section 36. The Petersons mined at these localities after closing the tunnel adjacent to the living quarters at the main site area. They abandoned this first tunnel due to problems with water seepage (Peterson 1987). Feature 11 is a pile of coal slack (Figure 18). This feature is not located near an adit, and may be the location of a cleaning area (Mundie 1987).

Historical Development. This site is the remains of the second coal mine operated by Pete Peterson and his son Mickey between approximately 1933 and 1951. After depletion of the coal seam at their first mine (24BE1334), Pete Peterson and this brother Lawrence obtained a State coal lease for the whole of Section 36, the area that contains the remains of site 24BE1333. Pete Peterson's daughter-in-law Dorothy (1987) indicated that the coal taken from Section 36 is classified as bituminous rather than lignite and, as such, is a fairly high quality coal.

Figure 16. Features 4 and 5, the remains of a tipple surrounded by a coal slack pile at site 24BE1333.



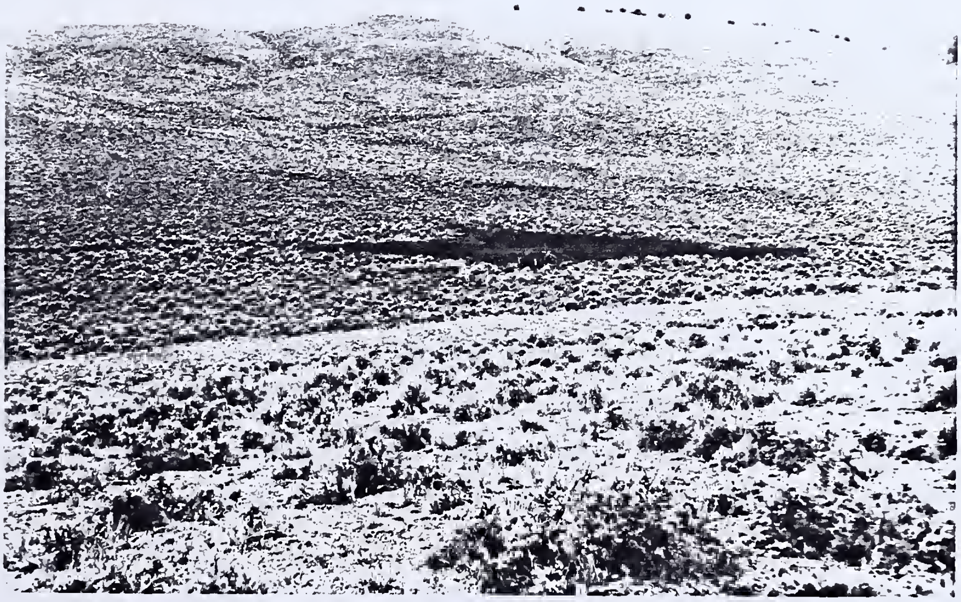


Figure 17. Looking southwest to Feature 8, coal slack with associated mine entry at site 24BE1333.

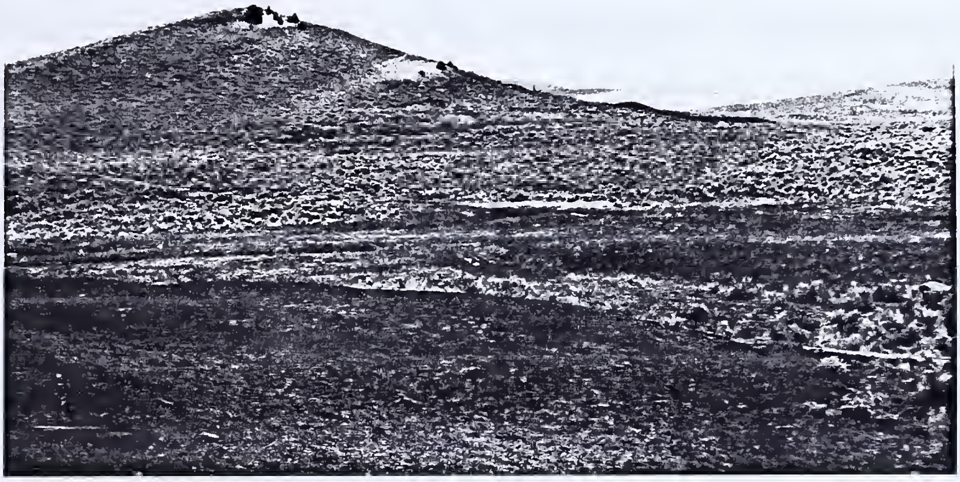


Figure 18. Looking south from site Feature 11 at site 24BE133 to Features 9 and 10 at base of hill in background.

Peterson worked the mine primarily with his son Mickey and usually two, but sometimes three, hired men. The method of mining employed by the Petersons is typical of that used by most small-scale operations. The coal was mined in rooms with pillars of intact coal left standing between the rooms for support. After drilling a hole in a solid bank of coal, Peterson would use a charge of black powder to shoot the coal. Blasting usually was done in the evening, after a full day of mining, in order to give the coal dust time to settle before the next work day. Each of the coal entries at the second Peterson mine had ventilator shafts and a fan to draw the coal dust from the interior of the mine (Peterson 1987).

As indicated above, the mine tunnels had interior tramways along which the loaded coal cars were hauled. At this second mine, the Petersons used a gasoline generator to hoist the cars from the mine. Apparently, the gasoline generator also powered

the ventilator fan and an interior lighting system. After hauling the coal out of the mine, the Petersons separated the lump coal from the slack, and then hauled the coal to their markets. Lump coal from the Peterson mine sold for $8.00 per ton (delivered), and slack coal for only $2.00-$3.00 per ton. The retail cost of the Petersons' coal included a state-assessed tax of #1.98 per ton.

Peterson sold his coal throughout a large geographic area. Dorothy Peterson's husband Mick delivered coal to Salmon and Leadore, Idaho, as well as to the towns of Dell, Lima, and Armstead in the Beaverhead valley south of Dillon, Montana. The mine also supplied ranches in the Medicine Lodge Creek and Prairie Creek drainages, the latter located north of the current site location. According to Gene Hildreth (1987), the Peterson mine was significant to the local community because it represented the closest source of heating fuel. Although the Petersons delivered most of the coal, a few local people came to the mine to haul their own loads.

Although the Petersons primarily sold lump coal, they had a lucrative contract for slack coal. During 1940 or 1941, they contracted with the Gilmore-Pittsburg (?) Railroad Company, which was in the process of abandoning its rail line in the vicinity of Salmon, Idaho. Peterson's mine provided slack coal for use in the steam engines on the machines used to remove track along the abandoned line (Peterson 1987).

The importance of the mine to the economic well-being of the Peterson family varied over the years. Mostly, the family operated the mine during the fall, winter, and early spring. During the summer, they lived and worked on a ranch owned by another of Pete Peterson's sons. In September, Pete Peterson, his son Mickey and his family would return to the mine to begin development in time to meet demands for coal required for heating during the winter months.

The family abandoned the coal mine in Section 36 in about 1951. According to Dorothy Peterson (1987), a variety of factors led to the decision to quit the mining business. The most important however, was the widespread adoption of fuel oil for heating after World War II, and a concomitant decrease in the market for coal. Also, after more than a decade of mining at the site, the easily accessible deposits of coal were exhausted. The retail cost of the remaining coal, exceeded the price that consumers were willing to pay for coal.

Evaluation and Recommendation. Although site 24BE1333 is associated with a relatively successful, small scale, family run, coal mining operation, the loss of structures and features at the site limits its ability to represent the historically significant activities with which it is associated. The main living quarters at the site have been removed, and the tipples at all of the mine adits have been destroyed. Due to the lack of physical integrity, the site does not appear to be eligible for nomination to the National Register of Historic Places.

Reclamation at this area will consist of the removal of the material from the coal slack piles to adjacent low-lying areas where they will be covered with topsoil and revegetated. Also, the subsidence holes and the collapsed tunnels will be filled and likewise revegetated. Some debris cleanup may be done at the site, but the standing structures probably will not be dismantled. We recommend that no further cultural resource work be conducted at this site prior to reclamation.

4.1.2.2 Prehistoric Isolate Ames-1

In addition to the features and structures associated with site 24BE1333, the HRA field crew located an isolated prehistoric artifact on the ground surface just below the top of a small knob approximately 50 meters east of Features 4 and 5, the tipple and coal slack pile (see Figure 8). This isolate is a unifacial tool made of dark red chert with light yellow inclusions. Intensive

survey of the area immediately surrounding the isolate failed to yield any evidence of additional cultural material. Ground surface visibility is good due to previous disturbance, and additional material would be easily located if present in the area. This isolated artifact is not significant in and of itself, and there should be no reason to avoid this area during reclamation activities.

4.1.2.3 Site 24BE423, the Smith Ames Coal Mine

The second site located within the Ames project area is the remains of the Smith Ames coal mine (Figure 19). B.J. Earle, BLM archaeologist for the Dillon Resource Area, originally recorded this site in 1977. Site 24BE423 is located directly adjacent to the west side of site 24BE1333 (Peterson's second mine).

Feature 1 is an adit that is almost totally closed at present (Figure 20). Its only indication is a small opening at the base of a natural sandstone outcrop. A piece of track and steel rail is visible a short distance from the opening to the adit. The remains of a tipple (Feature 2) and a waste/slack pile (Feature 3) are found downslope to the south of the adit (Feature 1). The tipple is represented by large, triangular timber supports. Lengths of steel cable that probably were attached to a hoist to pull coal cars from the interior of the mine are found near the tipple. There is relatively little coal stain associated with Feature 3, and the majority of the pile appears to consist of waste matrix.

Feature 4 is the remains of the cabin indicated on the 1977 site form (Figure 21). Although the cabin was standing in 1977, current remains consist only of a few scattered wall logs that show signs of having been burned, and a stone slab foundation.

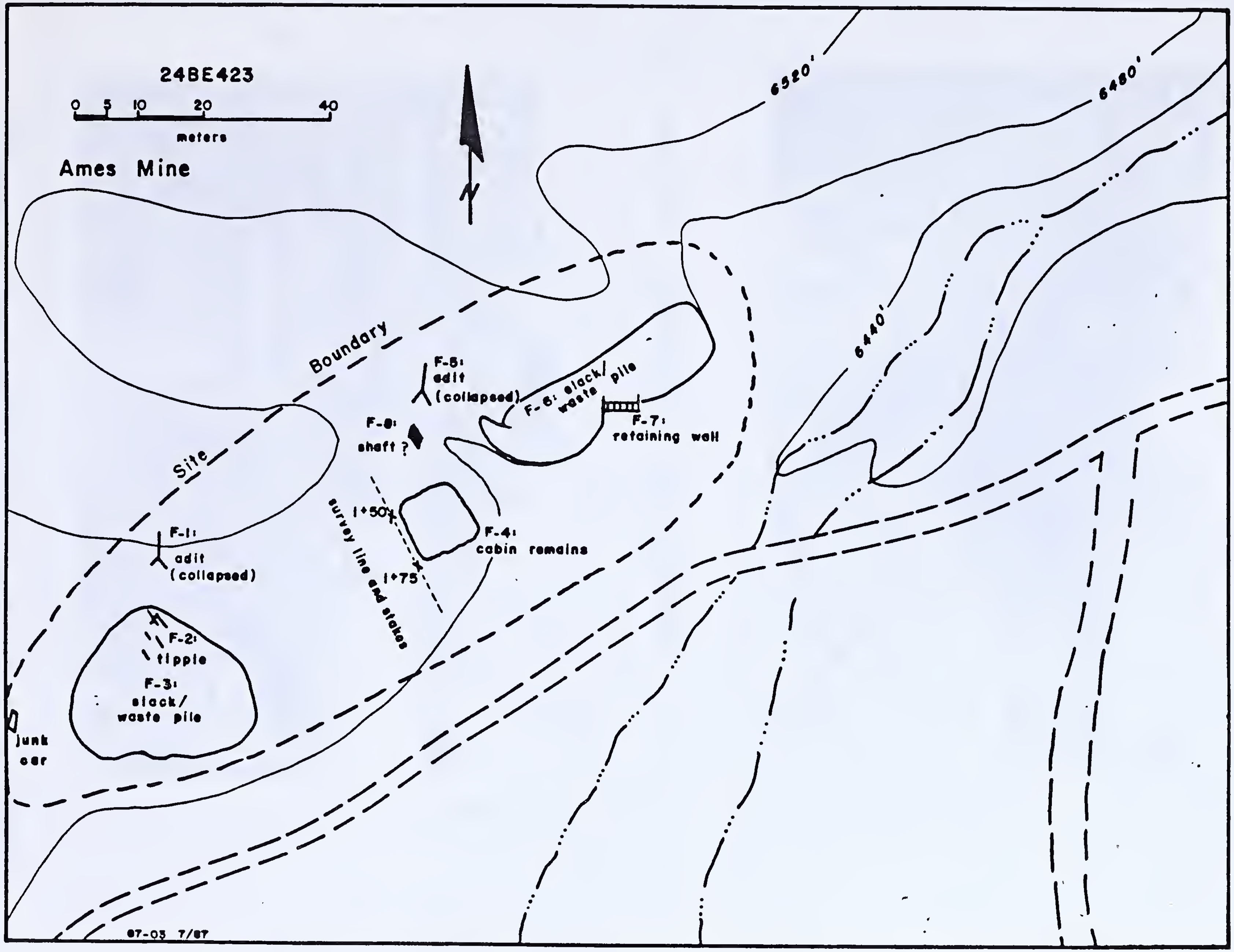


Figure 19. Plan map of site 24BE423, the Smith Ames mine.

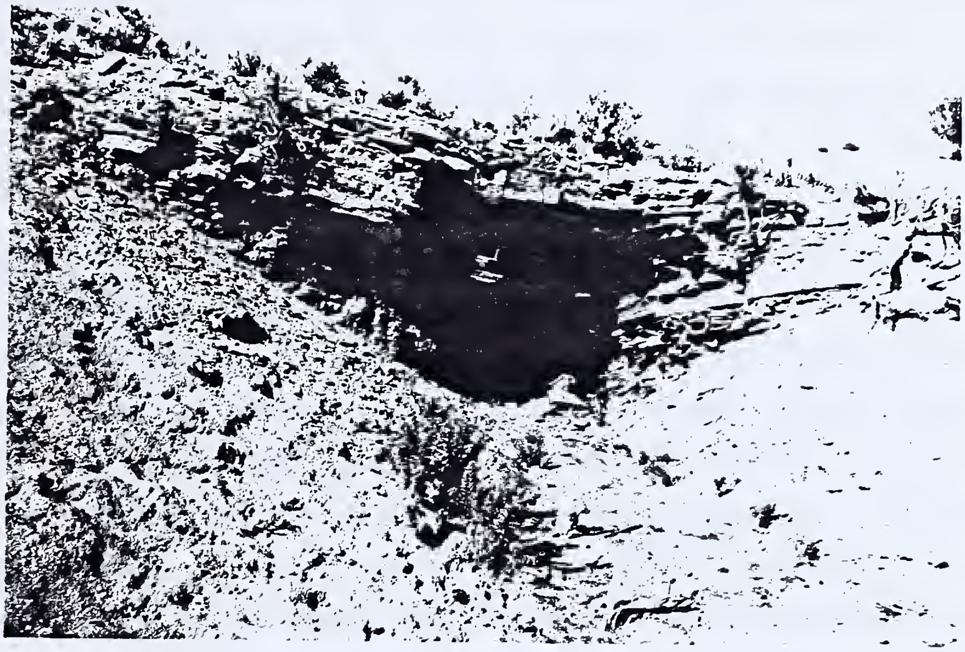


Figure 20. Feature 1, the adit at site 24BE423.

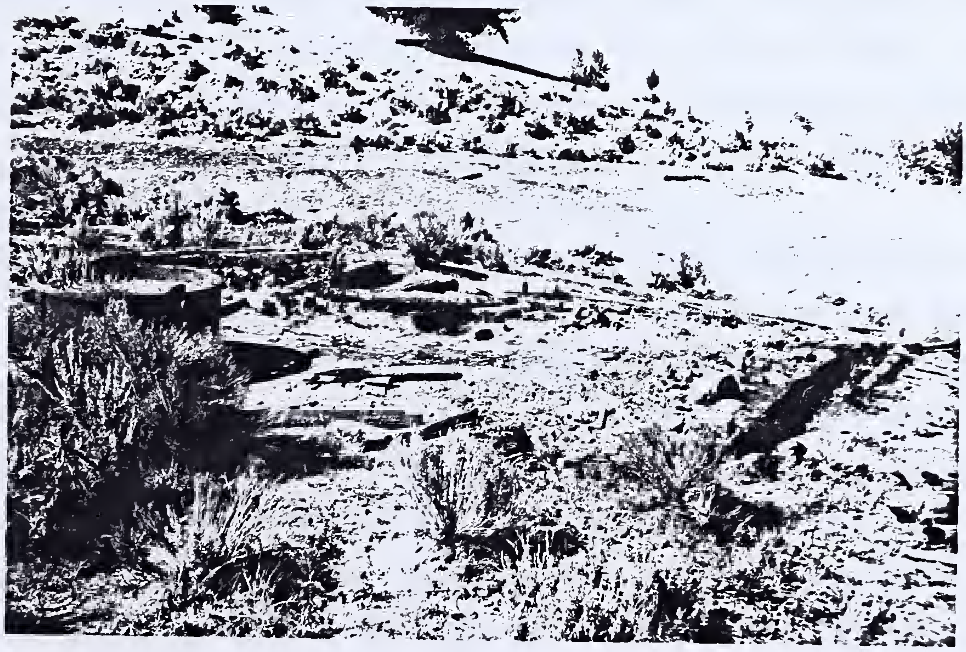


Figure 21. Feature 4, the remains of a cabin at site 24BE423.

Feature 5 is a long, rectangular depression that may be a collapsed tunnel. It is located north of the cabin remains. A large waste pile (Feature 6) lies adjacent to the east side of the tunnel (Figure 22). As indicated in the original 1977 site form, the waste pile has two definite levels. The shoring (Feature 7) mentioned in the original site form (Earle 1977) is still visible, but is beginning to buckle and fall towards the road that accesses the site (Figure 23). This feature may have served as a platform for a loading area. Feature 8, the possible shaft identified by Earle (1977), is located in the shallow draw between the large waste pile (Feature 6) and the cabin (Feature 4) and is represented by a kind of timber platform (Figure 24). Also located here is a piece of rail from a tramway. It should be noted that the draw does not appear to be entirely natural -- it may be a natural erosional feature emphasized by deliberate excavation.

Historical Development. HRA was able to locate very little information regarding the operation of site 24BE423. Federal coal lease records maintained by the Bureau of Land Management office in Billings indicate that Smith Ames obtained a coal permit for the E 1/2 E 1/2 of Section 35, T11S, R12W, in September 1936 (BLM Serial No. 082025). The permit was canceled in 1938. Apparently, Ames mined only about 400 tons of coal from this underground mine.

Dorothy Peterson (9187) indicated that the workings at the Ames mine already had been abandoned by the time her father-in-law, Pete Peterson, began extracting coal from the western portion of Section 36 (site 24BE1333). This would have been in approximately 1936 or 1937; therefore, the Ames mine must have been worked for only a short period of time. None of the local informants contacted by HRA remembered the individuals who worked at the Ames mine, nor the period of time during which it operated (Hildreth 1987; Andrus 1987; N. Wellborn 1987; H. Wellborn 1987).

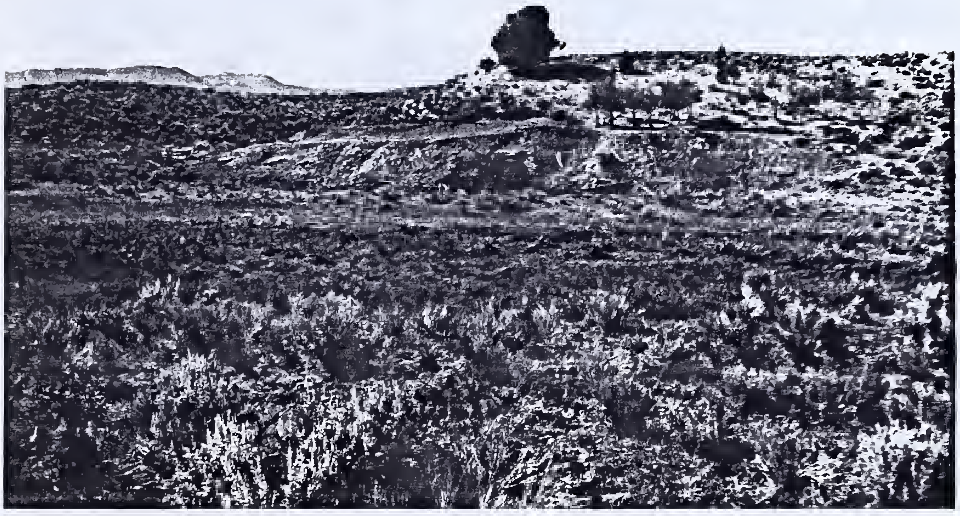


Figure 22. Feature 6, a waste pile at site 24BE423.

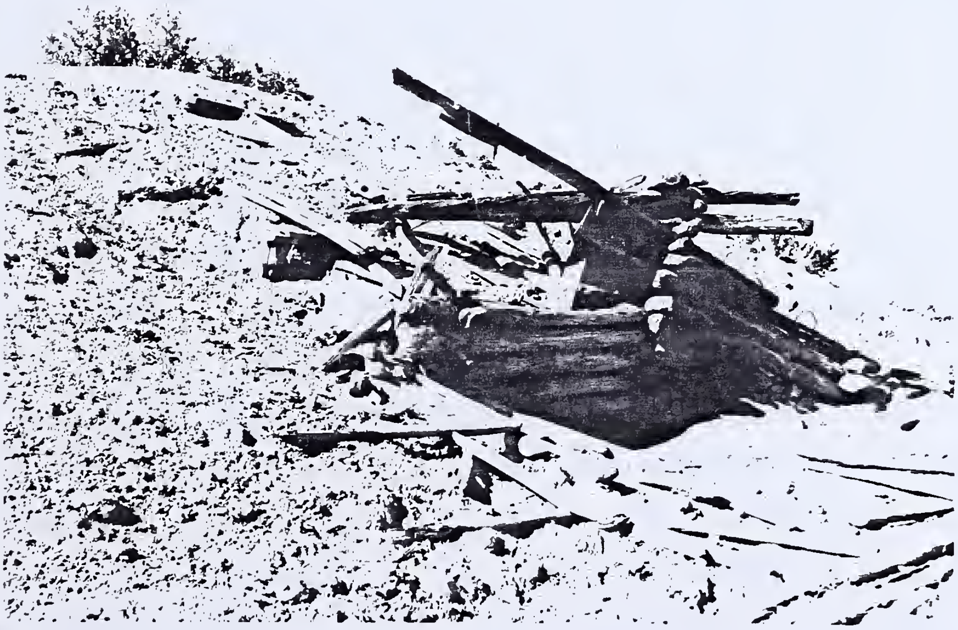


Figure 23. Feature 7, a cribbed log shoring at site 24BE423.

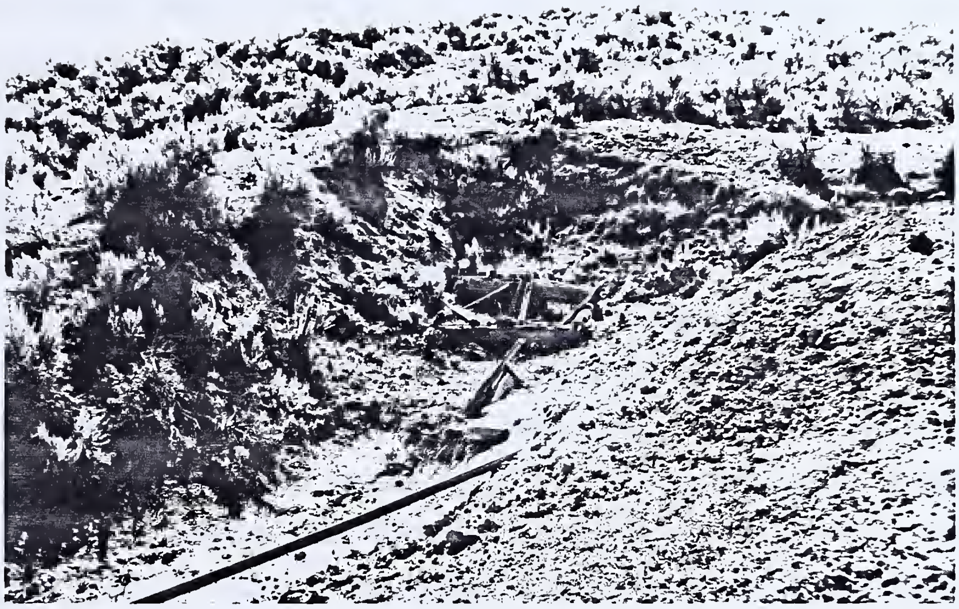


Figure 24. Feature 8, a possible shaft in an eroded subsidence area at site 24BE423.

Smith Ames' son, Mr. Roy Ames of Long Beach, California, vaguely remembers his father being involved with coal mining, but was unable to remember any specific information about site 24BE423. He indicated that the Ames family ranch was repossessed during the early 1930s, and that his father tried his hand at a variety of jobs during the Depression in order to support his family (Ames 1987). Most likely, Smith Ames opened this mine to sell coal for local consumption.

Evaluation and Recommendation. Site 24BE423 does not appear to meet the criteria of eligibility for nomination to the National Register of Historic Places. As indicated above, relatively little information was found regarding the development of the Ames mine. People familiar with historic events and development of the Medicine Lodge Creek drainage recognize the Peterson mine (site 24BE1333) as being of importance to the local community, but they do not attribute significance to the Ames

mine. That the mine was never economically successful is evidenced by the short duration of the federal coal permit, and by the relatively small output of coal. In addition, the remains currently present at the Ames mine have deteriorated dramatically since the initial site recording in 1977. Due to this deterioration, the site no longer has the ability to represent the activity with which it is associated (small-scale coal extraction for local consumption).

Reclamation work at this mine will include removal and reburial of the material in the waste and slack piles. Material from these piles will be used to close the adits and fill the subsidence areas, and the remaining material will be buried in low-lying areas adjacent to the reclamation features. HRA recommends that no further cultural resource work be conducted at this site prior to reclamation.

4.2 Big Horn County Reclamation Area: Site 24BH2488, The Lloyd Mine

One reclamation area containing one abandoned coal mine is located in Big Horn County. Site 24BH2488, the Lloyd mine, is located just north of the Montana/Wyoming border (Figure 25). It lies on the south side of the crest of a ridge that forms the divide between the Otter Creek drainage to the east and the Hanging Woman Creek drainage to the west, both of which are major tributaries of the Tongue River. The topography of the area may best be described as heavily dissected, with many small, intermittent drainages that have cut deeply into the underlying sedimentary rocks. Weather-resistant clinker (the product of burning coal seams) creates free-standing buttes and steep-sided ridges where erosion has worn away softer sediments. Pockets of Ponderosa pine and juniper are found in drainages and on more moist, north-facing slopes. Intervening areas are covered with mixed grasses, sage brush, yucca, prickly pear and a variety of other shrubs.

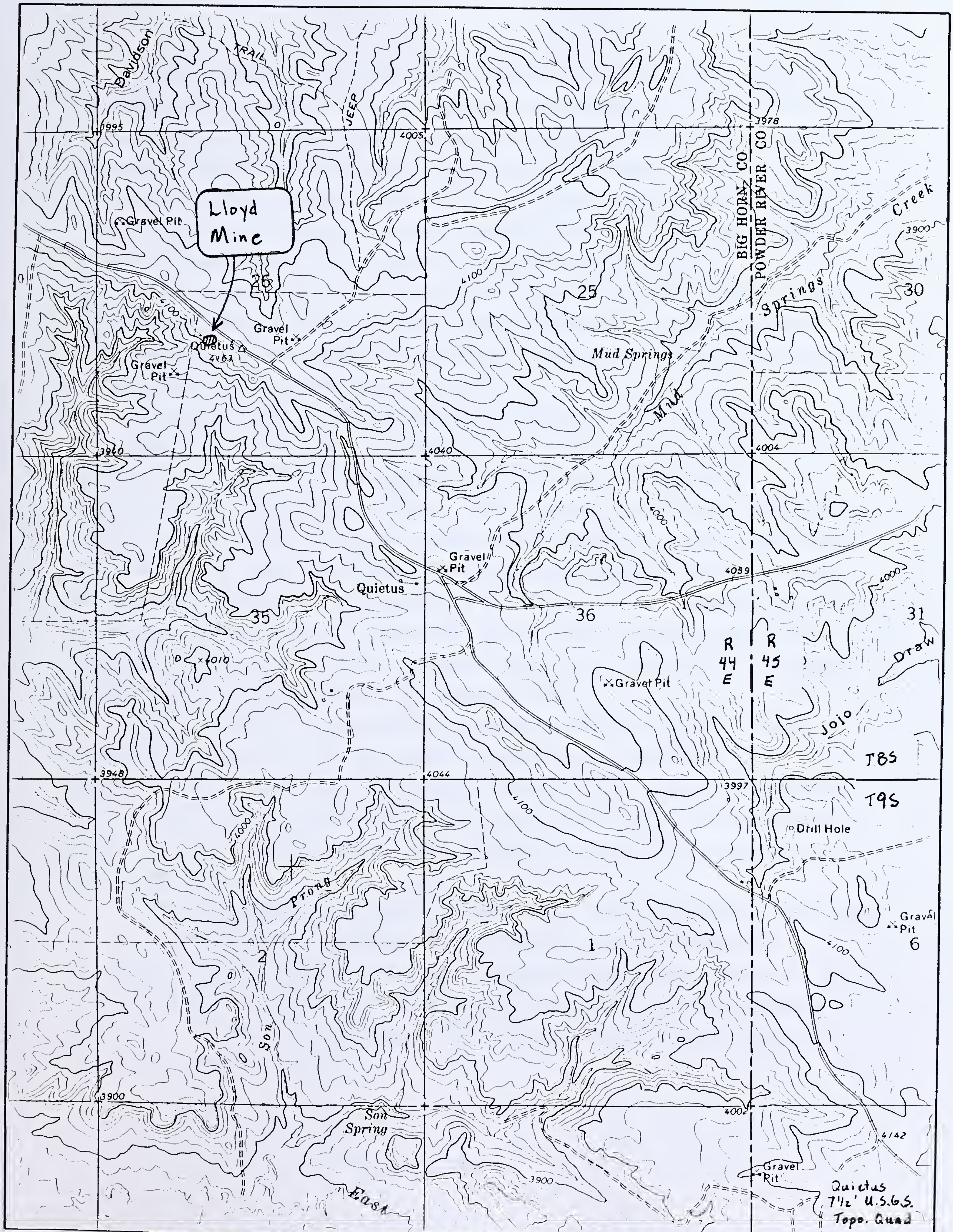


Figure 25. Copy of USGS quad showing location of the Lloyd mine project area in Big Horn County.

Although most of the coal mines in the eastern part of Montana are located in the Tongue River Member of the Fort Union Formation, the Lloyd mine appears to access a lignite seam of the Wasatch Formation (Montana Bureau of Mines and Geology 1958). Unlike the Fort Union Formation, which outcrops across almost the entire eastern portion of the state, the distribution of the Wasatch Formation is limited to the area along the Montana/Wyoming border in southern Big Horn County and to small, isolated pockets south of Red Lodge, Montana. The economic importance of the Wasatch Formation includes deposits of local commercial coal (Balster 1971:42).

Several U.S. Geological Survey reports deal with coal fields adjacent to the current project area, but the Lloyd mine does not fall within any of these areas and is not included in publications concerning them. Coal fields located in adjacent areas include the Birney-Broadus coal field, located immediately to the north (described in USGS Survey Bulletin 1072-C); the Northward extension of the Sheridan Coal Field, located west of the site (described in USGS Survey Bulletin 806-B); and the Spotted Horse coal field, located south of the site in Wyoming (described in USGS Survey Bulletin 1050).

Site 24BH2488 represents the remains of a small, local consumption coal mine operated by Mibra Lloyd during the depression of the late 1920s and 1930s. Mr. Lloyd accompanied the survey crew to the site, and described the way in which the coal mine got started and the methods he used to extract the coal from the vein.

The remains of the mine (Figure 26) are located at the head of an intermittent drainage and currently are limited to a collapsed adit (Feature 1) and a shallow subsidence area on the side slope above the adit and below the county road (Figures 27 and 28). A rather indefinite two-track road accesses the adit from the county road.

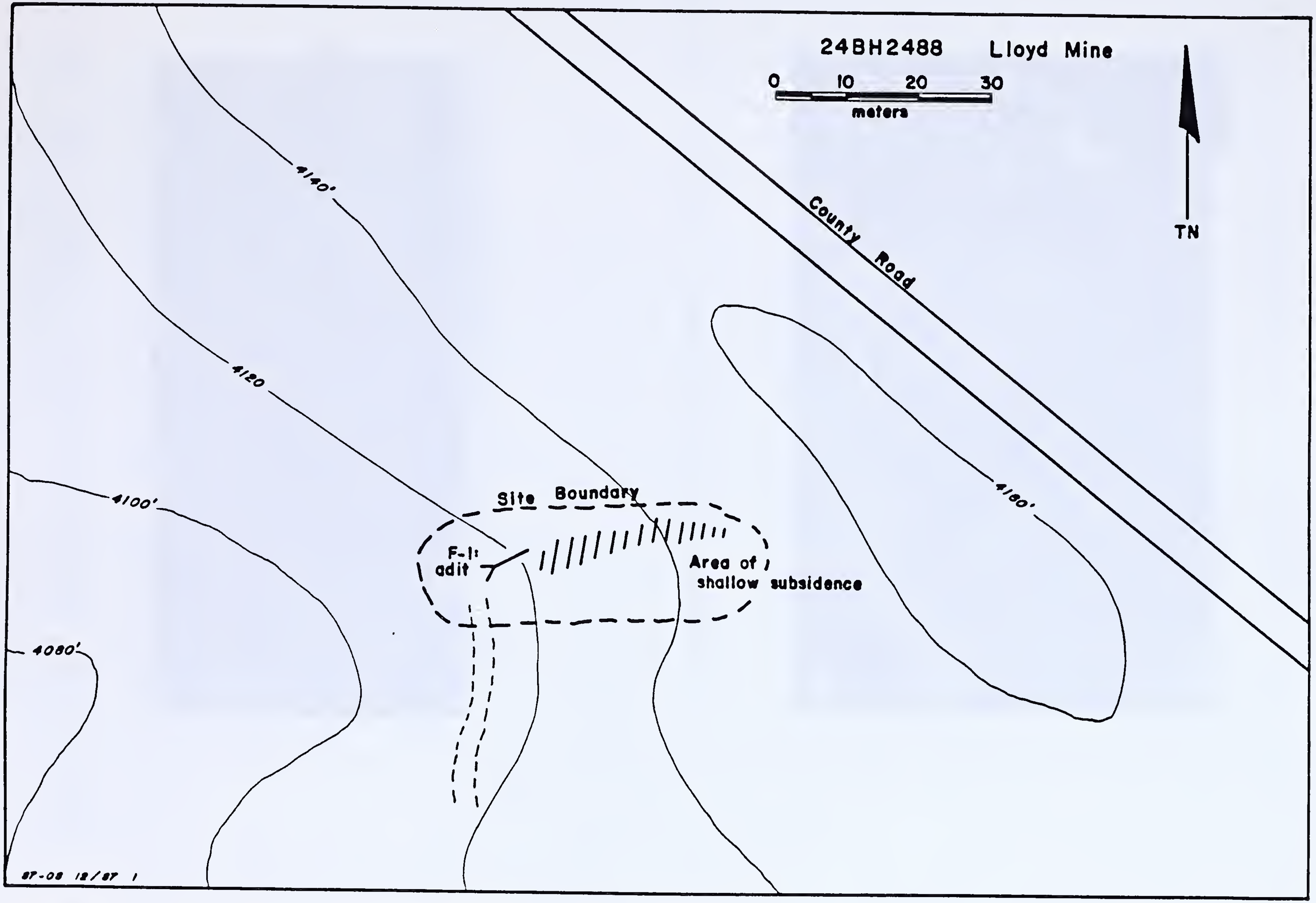


Figure 26. Plan map of site 24BH2488, the Lloyd mine.

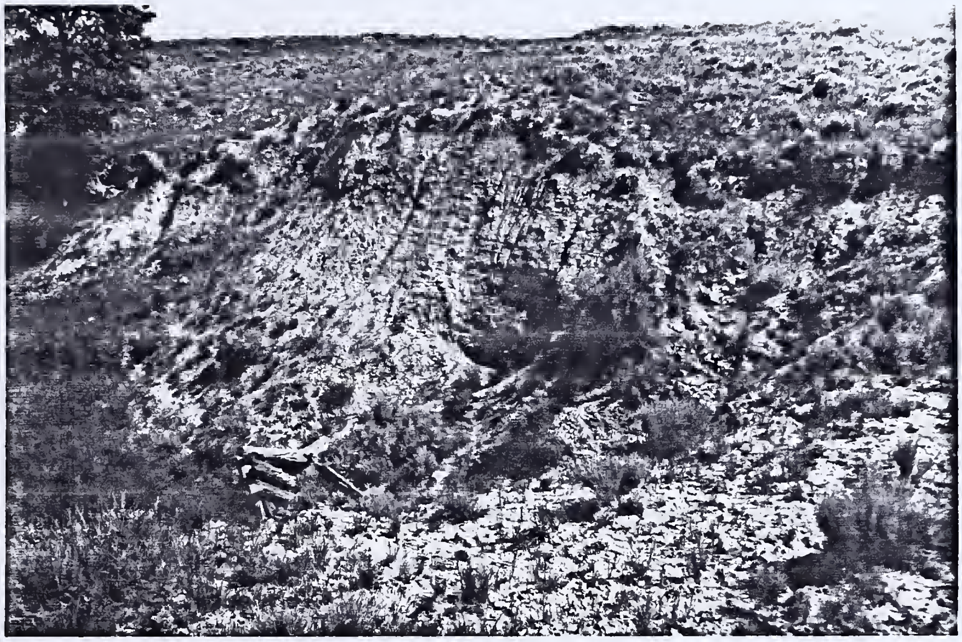


Figure 27. Feature 1, the adit at site 24BH2488.

Figure 28. Site 24BH2488, looking southwest to the mine area from the county road.

Historical Development. During the late 1920s, many ranchers in the area went bankrupt due to a combination of bad luck that included drought, grasshoppers, and poor livestock prices. Ten local families each contributed one dollar for the permit to mine the coal from this location on Mibra Lloyd's property (BLM Coal Lease No. 033482). Mary Lloyd (1987) described the mine as the "life blood of the community."

According to Mr. Lloyd (1987), this mine originated as a strip mine but was soon converted to an underground mine when the easily accessible coal was depleted. The coal was extracted from the underground mine in rooms with pillars of coal left in between, a support method typical of most small underground coal mines. According to Lloyd, the coal seam at this locality is about 10 feet thick and extends back from the adit towards the county road at ground level. He blasted about six feet of coal from the 10-foot seam with black powder, and the remaining four feet formed the roof of the rooms. Unlike many small coal mine operations, Lloyd hired a man to timber the rooms in order to avoid cave-ins. Lloyd estimates that the mine workings extend back from the adit about 200 yards and possibly under the county road.

Lloyd only worked the mine during the winter, when the temperature was below 32 degrees. The cold air helped to settle the coal dust that resulted from blasting in the rooms. Although he often worked by himself, he sometimes had a boy to help. After the coal was blasted from the seam, they loaded it into a wagon that was then pulled out to the mine entrance by horses. Apparently, the mine did not have an interior tramway or a tipple. Individuals drove their wagons to the mine opening and bought a wagon load of coal for $1.00.

Lloyd indicated that the mine was inspected only twice during the 8-10 years of operation. Once, the mine inspector told him that he should be paying royalties on the coal being sold. The second time, the inspector indicated that the mine should have a ventilator shaft. Lloyd decided to close the mine

rather than make the necessary improvements. Another factor in Lloyd's decision to close the mine was the fact that many people had begun to use heating oil instead of coal. The lease for this mine was canceled in 1945, and the approximate total production is estimated at 700 tons (BLM Federal Coal Lease Files, Billings, MT).

Evaluation and Recommendation. Site 24BH2488 does not appear to be eligible for nomination to the National Register of Historic Places. The single entry to the mine has collapsed, and the track that leads to it is overgrown to the point of being unrecognizable. Although this mine appears to have been important to the ranching community south of Otter Creek, site remains lack integrity and no longer adequately represent the historic activities with which they are associated.

The primary reclamation concern at this site is that the underground workings of the mine may extend beneath the county road. If this is the case, the cavity under the road will be filled. There is little else to reclaim in the mine area, since much of the previously disturbed area has already revegetated naturally. Since no other cultural resource sites are located in the immediate vicinity of the areas to be reclaimed, we recommend that no further cultural resource work be conducted at this site prior to reclamation.

4.3 Custer County Reclamation Areas

The Sunday Creek and Hay Creek 30 project areas are located about 30 miles apart within Custer County. The Sunday Creek project area, as the name implies, is located within the Sunday Creek drainage, a first-order tributary of the Yellowstone River. The Hay Creek 30 project area is located approximately 30 miles north of the Sunday Creek area on the north side of the divide that separates the Sunday Creek and Yellowstone River drainages from the drainage basin of Little Dry Creek and the Missouri River.

The character of the two project areas is slightly different. The proposed Sunday Creek reclamation area is located not far from its confluence with the Yellowstone River. Level terraces and benches characterize the immediate project area, with heavily dissected ridges rising abruptly from the valley floor.

The Hay Creek project is located in an upland area, towards the head of a coulee that forms one of the branches of Wolf Creek, an intermittent tributary of Hay Creek. Hay Creek is an intermittent tributary of the Little Dry Creek drainage. Shallow, intermittent drainages have cut through underlying sediments to form wide, gently sloping, ridges. In this area, the coulee bottoms are narrow and steep-sided, although relatively shallow when compared with the major drainages like Sunday Creek. Vegetation consists of a variety of short prairie grasses, sage brush, and prickly pear cactus. Currently, both of the project areas are used for agricultural purposes (primarily cattle grazing).

The bedrock that outcrops throughout this region is part of the Fort Union Formation. Coal or lignite seams associated with this formation have supplied the fuel needs of local ranchers and townspeople since the area was first occupied by Euro-Americans. Timber being scarce in much of the region, coal or lignite represents the most readily available fuel to early non-Indian

settlers. A 1904 report of the Inspector of Coal Mines of the State of Montana mentions Custer County coal mines, only in passing:

> There are a few small operations in this county which produce about 10,000 tons of inferior lignite for local consumption, principally used at Miles City. These small properties are only worked to any appreciable extent during the winter season (Wilsh 1904:20).

Like most areas of eastern Montana, Custer county coal was not mined for large scale commercial marketing.

4.3.1 The Sunday Creek Project Area

The Sunday Creek project area falls within the Miles City Coal Field (Collier and Smith 1909). Coal seams that outcrop in the vicinity are classified as part of the Kircher coal bed and are described as follows:

> As it is situated near drainage levels, its croppings are usually covered by river gravel or wash from the hills.... There are ... sufficient exposures to indicate that the bed is exceedingly variable and workable only in small areas (Collier and Smith 1909:47).

The earliest specific reference to mining along Sunday Creek near the present reclamation area comes from a 1906 U.S. Geological Survey Bulletin, in which mining is described as follows:

> North of Yellowstone River, on Sunday Creek and its tributaries, coal outcrops at many points in Tps. 8, 9 and 10N, R47E. It has been mined for several years just below the bridge over South Sunday Creek, in sec. 18, T.8N., R47E. The bed outcrops in the cut bank along the stream for a distance of 300 feet and lies only 2 to 3 feet above the bed of the creek. It is from 4 to 4-1/2 feet thick and the coal is of good quality.
>
> Mining is carried on here partly by stripping, the soft sandstone being blasted off in large blocks, and partly by drifting in along the bed. The coal is mined only during the winter and is sold in Miles [City] (Leonard 1906:206).

Although several commercial mines located north and west of Miles City were supplying coal to the town in 1909, mining along Sunday Creek was limited to "stripping at a number of areas" (Collier and Smith 1909:49).

Within the Sunday Creek project area, Spectrum Engineering identified four distinct reclamation areas: Sunday Creek South, Sunday Creek West, Sunday Creek East, and Sunday Creek North (Figure 29). Unfortunately, HRA made the first field contact for this project and located only the Sunday Creek North project area. Therefore, the pedestrian inventory conducted by HRA included only the Sunday Creek North reclamation area. Spectrum Engineering provided HRA with photographs and site maps of the three remaining areas, which enabled us to prepare site forms for the mines, obtain Smithsonian numbers for the sites, research their history, and evaluate the history of the mines. However, clearance for reclamation of the Sunday Creek South, West, and East reclamation areas must be contingent upon the results of a pedestrian inventory.

Very little information was obtained regarding the four areas to be reclaimed in the Sunday Creek project area. The BLM historical index contains no reference to coal leases for any of the four reclamation areas at Sunday Creek. Also, interviews with current landowners produced only limited information regarding the history of coal mining in this section.

4.3.1.1 Site 24CR669, Sunday Creek North Site

Pedestrian survey of the proposed Sunday Creek North reclamation area resulted in the recording of a multi-component site that includes the remains of the coal mine and a prehistoric site (Figure 30). Although prehistoric and historic materials are intermixed at the site, the two components are described separately below.

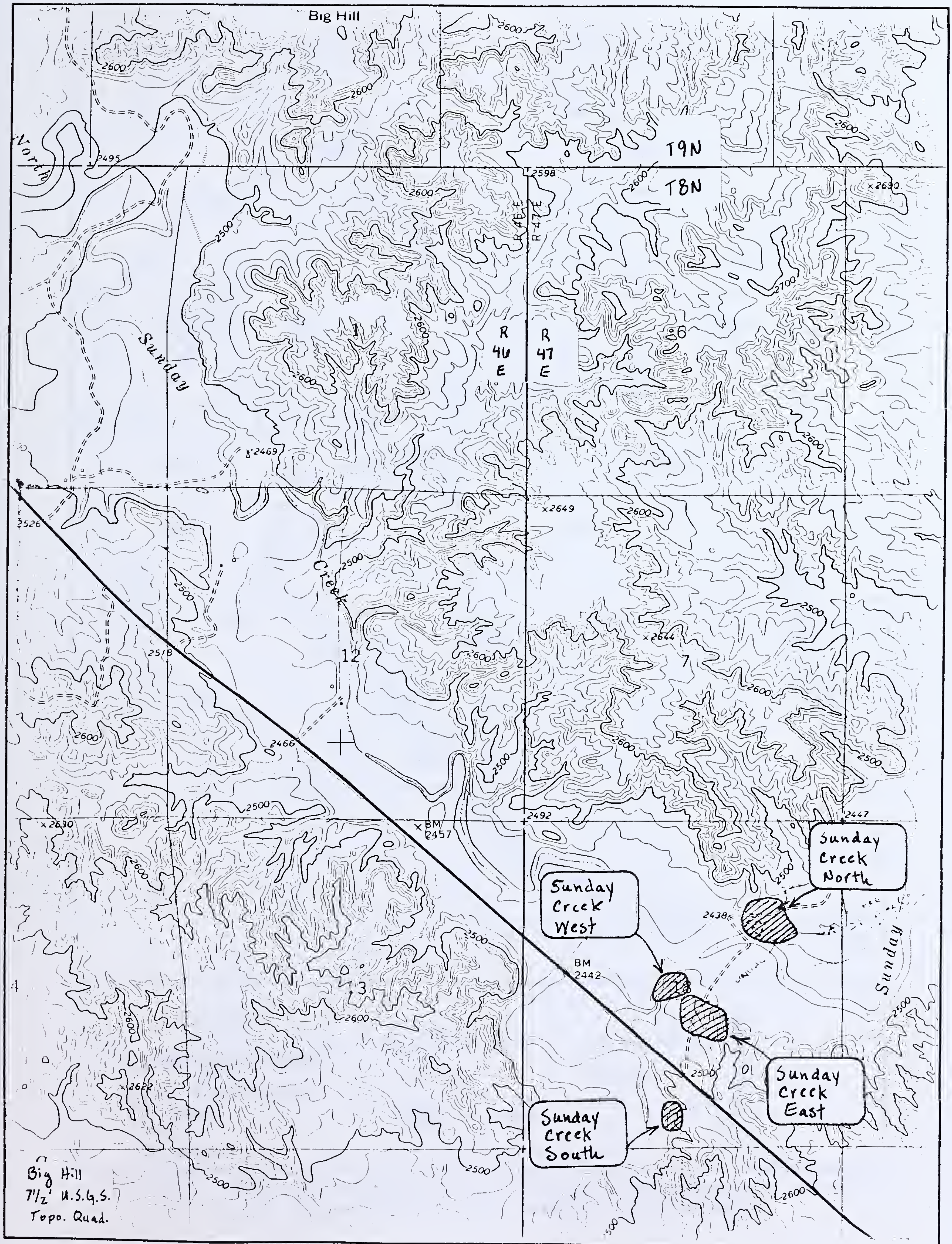


Figure 29. Copy of USGS quad showing location of the four reclamation sites included in the Sunday Creek project area.

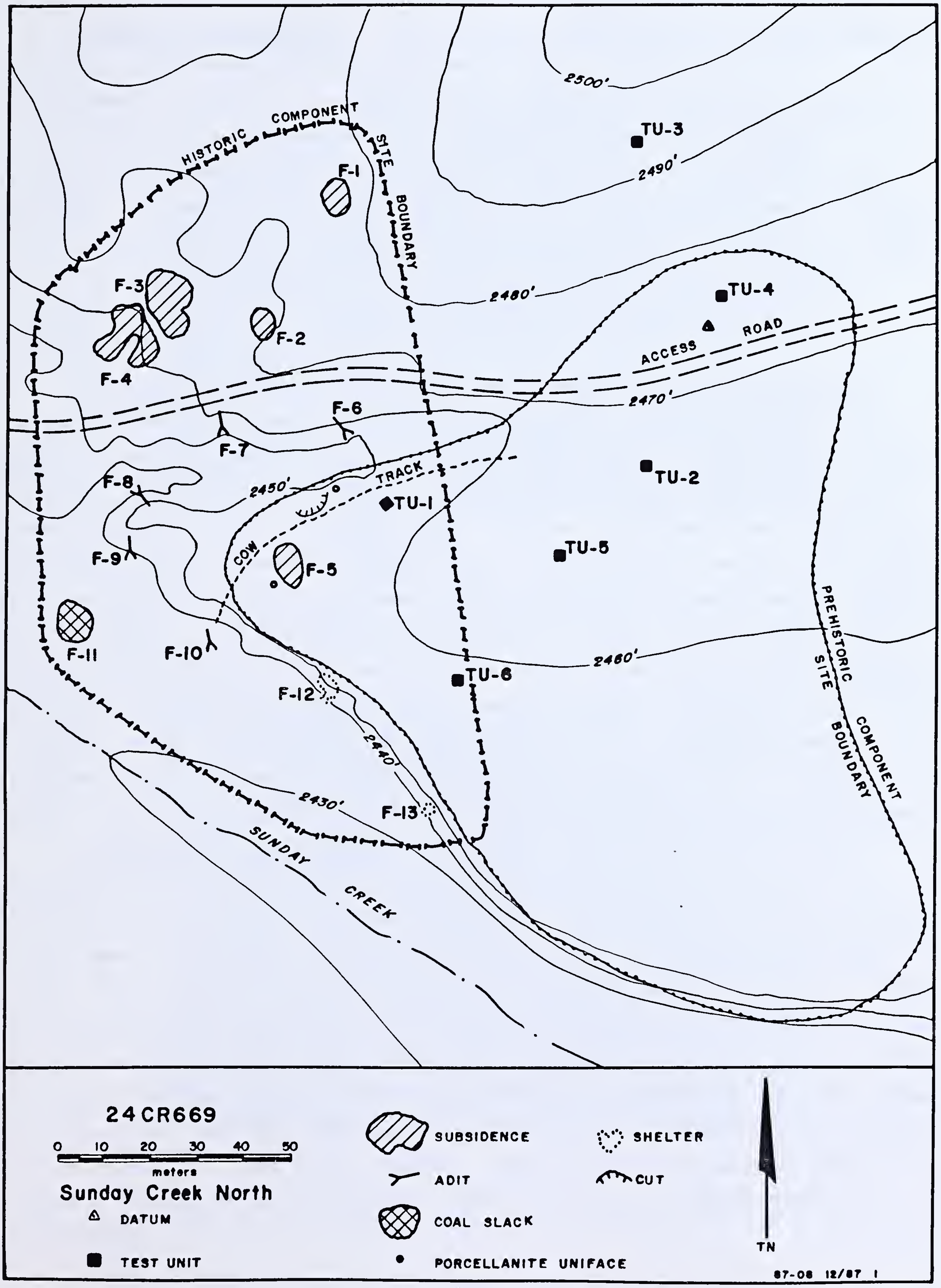


Figure 30. Plan map of Site 24CR669 showing overlapping distribution of prehistoric and historic components.

Historic Component. The majority of mining-related features at this site consist of subsidence holes (Features 1-5), collapsed or partially open adits (Features 6-10), and also a coal slack pile (Feature 11). These features are located immediately above the north side of the Sunday Creek drainage channel. The adits are located in the cutbank of a small coulee cut in the the first terrace above Sunday Creek (Figures 31 and 32), and the subsidence holes are located on the top of the terrace (Figure 33). A small amount of historic trash is scattered about the site area.

In addition to the features mentioned above, one rather unusual feature (Feature 12) was observed, which consists of a small room excavated into the soft sediments of the cutbank above Sunday Creek. The ceiling is low, and the rear wall contains a small alcove with an arched top. A board has been set into the alcove to form a shelf (Figure 34). Additional boards are lying on the floor inside the room, indicating that there may have been more shelves. Although this feature is shown on the engineer's map of the project area as an adit, the interior of the feature does not correspond with this interpretation. Feature 13, located slightly downstream from Feature 12, may represent another room. However, the entrance to Feature 13 is boarded shut, and the appearance of the interior could not be determined.

Historical Development. HRA was able to locate little information regarding the coal mining conducted at this site. Tol Moore and Charles Moore, brothers and long-time residents of the area, and whose family currently owns the site, indicated that this is the remains of the mine worked by Joe Slappert and his partner Red Lawrence. Tol Moore remembers that four or five people worked at the mine, but that Slappert was the boss. Both Tol and Charles Moore (1987) indicated that Feature 12, the room hollowed out of the cutbank, was used by the miners as a shelter and a place to cook their meals. According to Charles Moore (1987), Slappert and Lawrence sold the coal to Miles City residents.

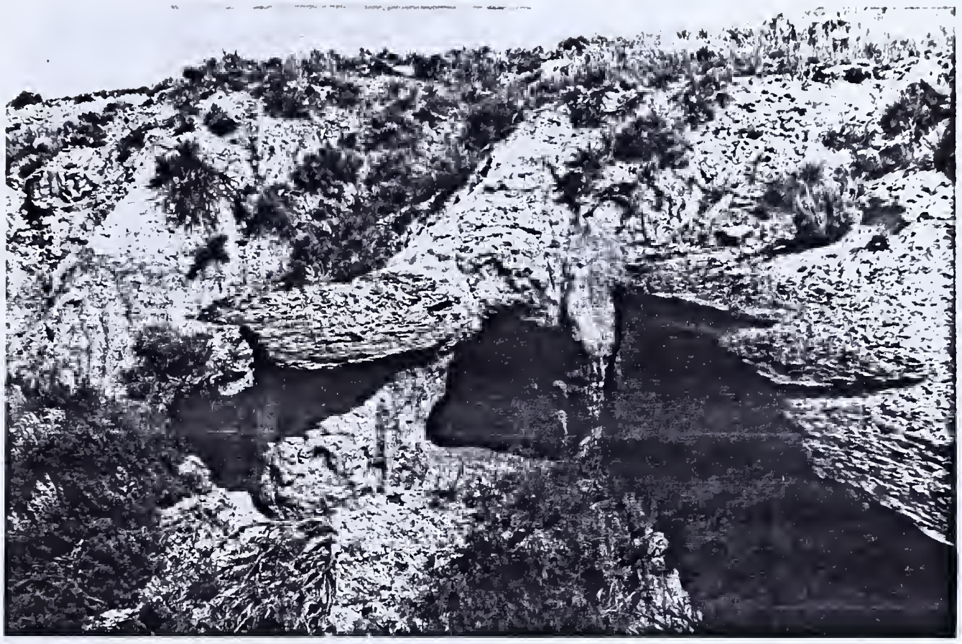


Figure 31. Feature 6, adit in coulee bottom at site 24CR669.

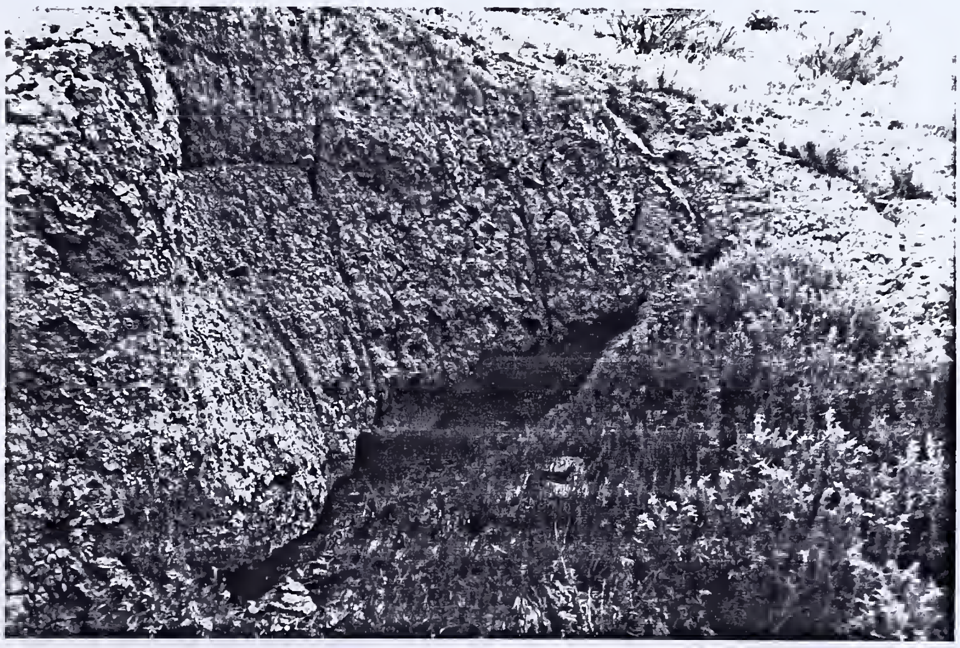


Figure 32. Feature 8, adit at mouth of coulee at site 24CR669.

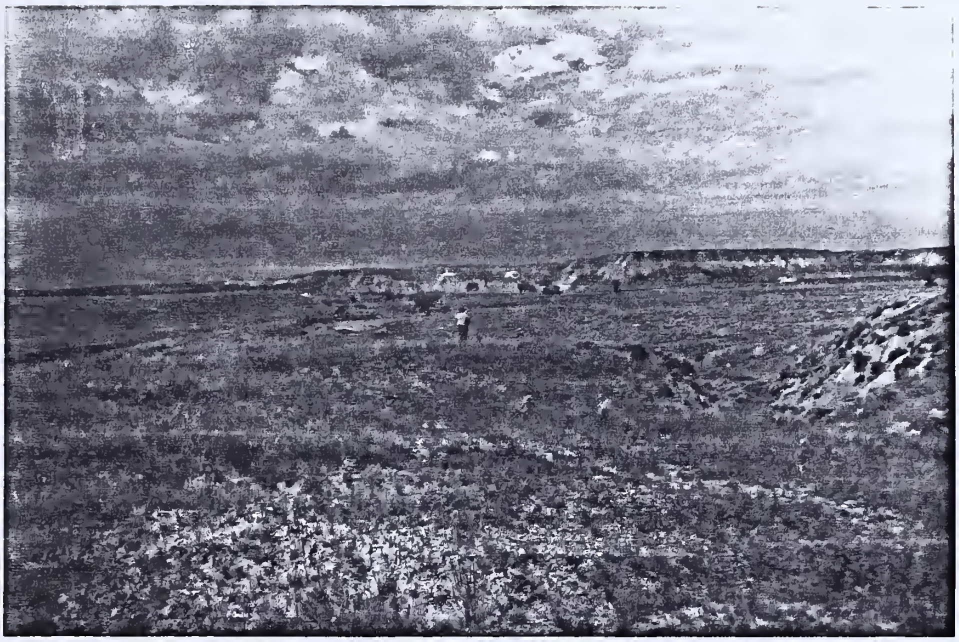


Figure 33. Overview of site 24CR669 to west of terrace top, with subsidence areas. The coulee with the adits is located at extreme right.

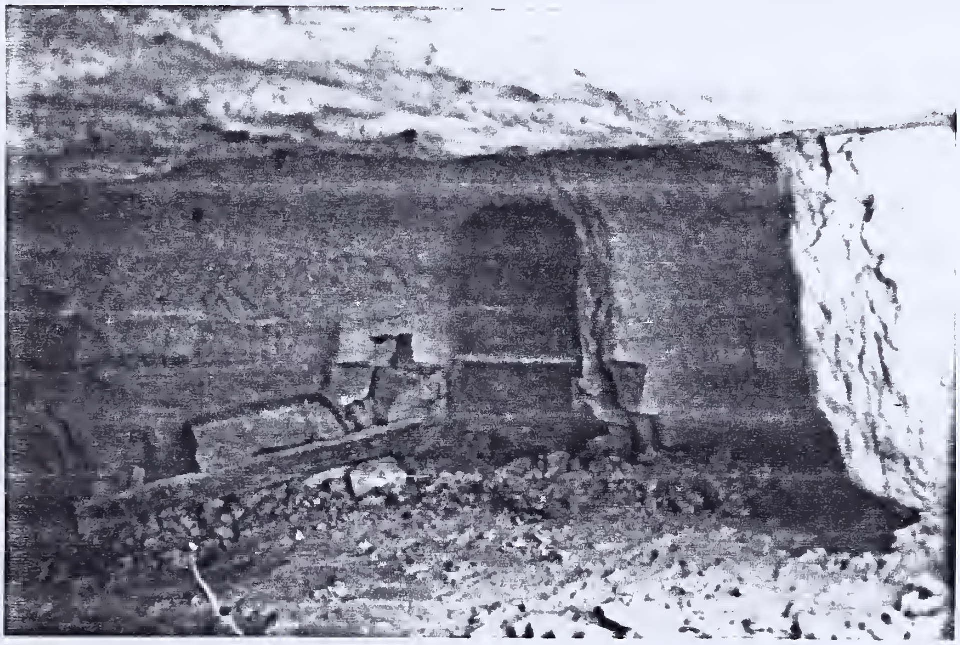
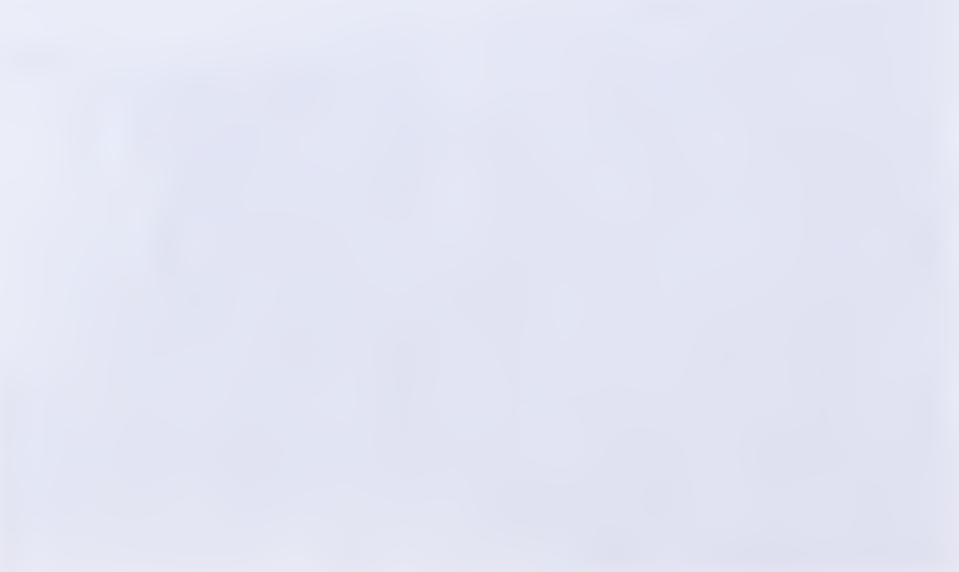


Figure 34. Interior of Feature 12 at site 24CR669.



Prehistoric Component. The horizontal distribution of prehistoric material at site 24CR669 covers a larger area than the historic material. Basically, the north edge of the prehistoric material overlaps the south edge of the historic site, in an area that corresponds to a narrow, ridge-like, erosional feature at the edge of the first terrace above Sunday Creek (see Figure 30).

Prehistoric cultural material observed at the site includes a sparse scatter of debitage and fire-broken rock in an eroded context across the terrace surface. The cultural material occurs mostly along the edge of the terrace in areas with a patchy sod layer. Two spent cores, cortical and interior flakes of grey porcellanite, a few basalt and yellowstone agate flakes, and one unifacially modified porcellanite flake also were observed at the site. All of the material types present appear to be available in cobble form from local, naturally occurring gravel. Also, outcroppings of porcellanite are located within 12 miles of the project area (Clark 1987). Pieces of fire-reddened and angularly broken quartzite were observed on the ground surface. However, like the lithic material, there is no apparent patterning to this material.

Subsurface Testing. One of the subsidence holes (Feature 5) is located directly adjacent to the surface distribution of lithic material at the site. Since this area cannot be avoided during reclamation, the site was tested to determine the character of the prehistoric material at the site and its potential for yielding additional significant information.

Before returning to the site area to conduct the subsurface testing, HRA contacted Jerry Clark, BLM Miles City District Office archaeologist, regarding any available information about sites in the Sunday Creek area that would help in planning the testing strategy. Clark (1987) stated that the Sunday Creek drainage has a fairly high site density and that the most common type of projectile point styles in local collections are representative of the Late Middle and Late Prehistoric Periods,

(approximately the last 2,800 years). Mary Bloom, BLM Big Dry Resource Area archaeologist, indicated that many of the sites recorded in the Sunday Creek drainage are deflated (i.e., the deposits at the site have been affected by wind erosion), and that this condition is due to the character of the soils found in the area (Bloom 1987).

HRA returned to site 24CR669 in August to conduct the subsurface testing. The first task was a pedestrian survey of the entire terrace, in order to better better identify the distribution of cultural materials present. Generally, cultural material is most visible at the edges of the terrace, where the sod layer has been destroyed by erosion. The interior portion of the terrace is well sodded, and visibility is restricted to about 20% of the ground surface. Even taking into account the difference in ground surface visibility between the edges and interior of the terrace, the distribution of cultural material appears to be more dense along the terrace edge. The horizontal extent of cultural material on the surface is great, extending from the coal mine area, eastward at least to the north/south section line between Sections 18 and 17. However, there does appear to be a break in the surface distribution at the east edge of the second major terrace lobe, east of the coal mine. Therefore, the boundary drawn for site 24CR669 corresponds to the east edge of the terrace lobe, and the cultural material farther east probably should be considered a separate site.

The locations of test units were selected to include both the interior and edge of the terrace. Another consideration in selecting test unit locations was their proximity to reclamation features, and determining whether or not the area of the site to be impacted by reclamation (which represents a comparatively small part of the site) contains significant prehistoric cultural remains.

Six test units were excavated at site 24CR669 (see Figure 30). Test Unit 1 (1m x 1m) was excavated on the terrace lobe that contains Feature 5, the deep subsidence hole. There is very little vegetation in this area, and porcellanite debitage is found directly on the ground surface. The entire test unit (1 square meter) was excavated to a depth of 10 cm, and the west half was excavated to a depth of 30 cm (Figure 35). Two pieces of cultural material were recovered in the screen from the 0-10 cm level. These include a small, interior flake of grey porcellanite and a piece of a fire-broken quartzite cobble. Soils in this test unit can be described as light brown sandy silt, grading to silty clay with depth. Although soils on the surface are dry (almost powdery), they became slightly more moist with depth to approximately 8-10 cm below the surface. Below 10 cm, the soil again becomes dry and more compact (cement-like), with rounded gravel coated with calcium carbonate. At about 22 cm below the surface, one encounters pea gravel as well as tabular pieces of sandstone. The pea gravel may be capping the bedrock in this area.

Test Unit 2 was excavated back from the terrace edge in an area with a dense sod layer. This 1m x 1m unit was excavated to a depth of 25 cm, and contained no cultural material. Beneath the well-developed sod layer, the soil appears to consist of light brown sandy silt that increases in compactness with depth (Figure 36).

Test Units 2 and 3 were excavated north of the access road to the site. Both of these test units were 50 cm square, and both were excavated to a depth of 30 cm below the surface. Soils consist of slightly moist, sandy silts grading to hard, dry, silty clays with depth (Figure 37). One small interior flake of grey porcellanite was recovered from in the screen from the 0-10 cm level.

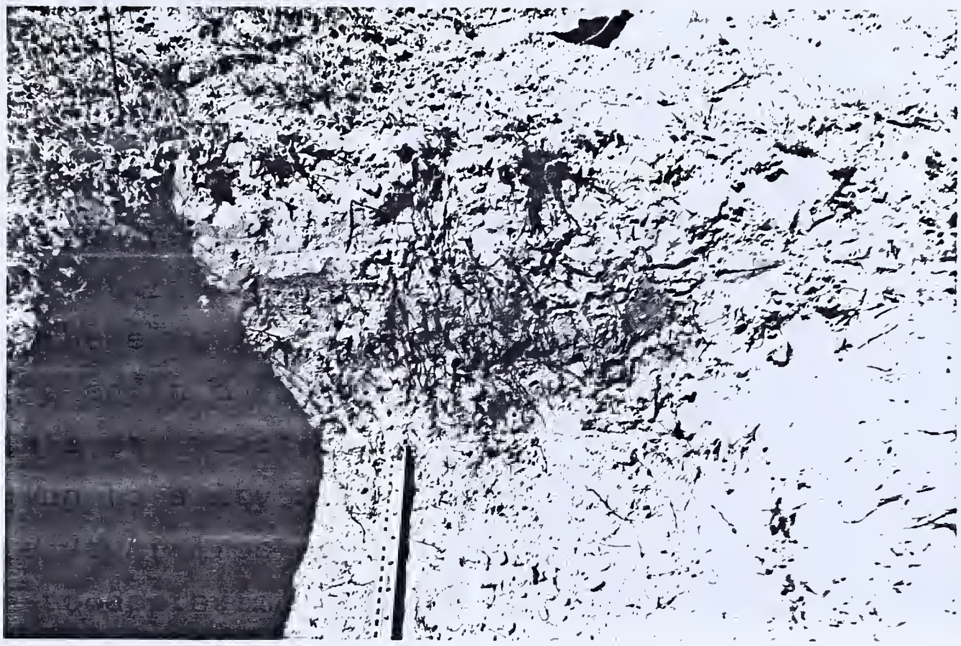


Figure 35. North wall profile of Test Unit 1 at site 24CR669.

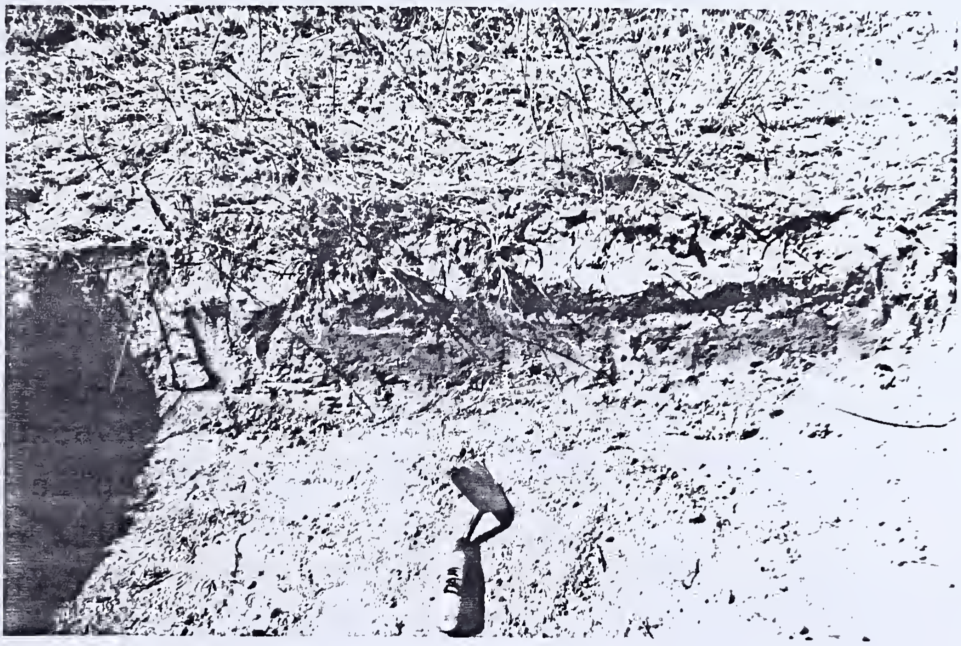


Figure 36. North wall profile of Test Unit 2 at site 24CR669.

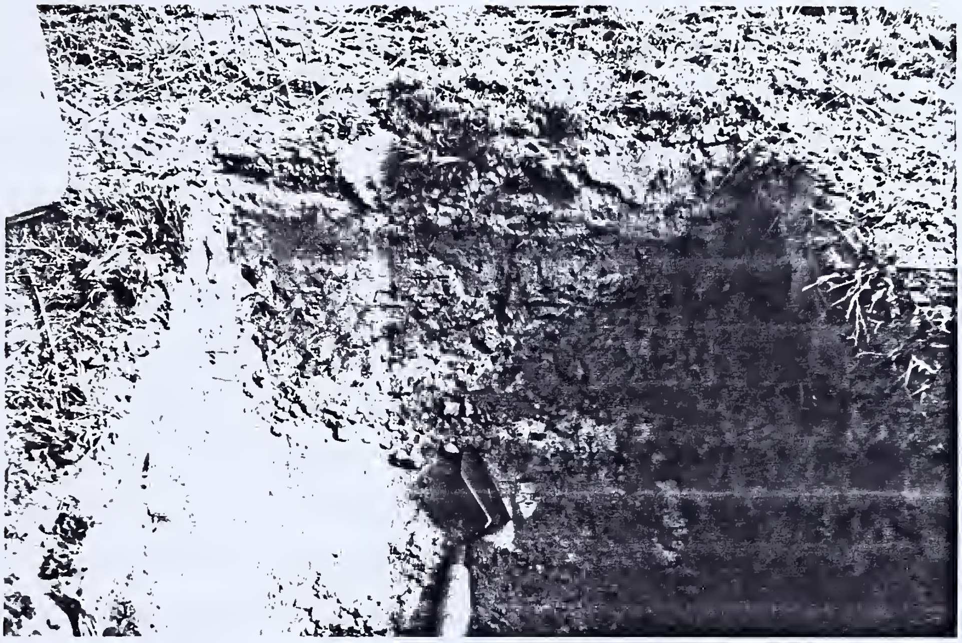


Figure 37. North wall profile of Test Unit 4 at site 24CR669.

The remaining test units were excavated on the terrace lobe south of the lobe that contains the remains of the mine. Test Units 5 and 6 (both 50cm x 50cm) were both excavated to a depth of 50 cm below the surface. Test Unit 5 was located in a area with sparsely scattered lithic material and a few pieces of fire-broken rock on the surface. The sod layer is patchy, with cultural material visible on the surface of eroded area. Soils are sandy silts, grading to silty clay with depth. Small gravel is found throughout the 30 cm, and increase in frequency slightly with depth. No cultural material were recovered from this test unit.

Test Unit 6 was excavated at the edge of the terrace, in a an area with patchy vegetative cover. Cultural material visible on the eroded ground surface in the vicinity of this test unit

includes sparsely scattered lithic material and one piece of fire-broken quartzite (Figure 38). Soils are similar to those found in other test units (Figure 39). Four small grey porcellanite flakes were recovered in the screen from the 0-10 cm level of this test unit. No further material was recovered from Test Unit 6.

The results of subsurface testing appear to indicate that the cultural material remaining at site 24CR669 is limited to a sparse scatter of debitage, probably from the area just below the sod layer. Scattered pieces of fire-broken quartzite indicate that features may once have been present in the area, However, currently there is no patterning to this material and no datable material in the form of charcoal was observed at the site. Also, no temporally diagnostic artifacts were observed at the site. The lack of formal tools at this rather large site may be the result of previous collecting by local amateur archaeologists.

Evaluation and Recommendation. Relatively little can be said concerning the character of prehistoric materials at this site. The presence of the fire-broken rock, the spent cores, and the unifacially modified flake, as well as the close proximity to a water source, indicate that the area may have been used as a campsite. However, the material observed at the site does not indicate the temporal affiliation of prehistoric activity, nor a clear picture of the activities that were carried out in the area. It appears that the specific environment of the site (i.e., a dry elevated terrace above the active flood plain) with its poorly developed soils is not conducive to site preservation. Conversations with professional archaeologists familiar with the project area indicate that 24CR669 is similar to other deflated lithic scatters located within the Sunday Creek drainage.

Neither the prehistoric or historic components at site 24CR669 appear to be eligible for nomination to the National Register of Historic Places. The historic remains do not appear to be associated with individuals or events of significance to

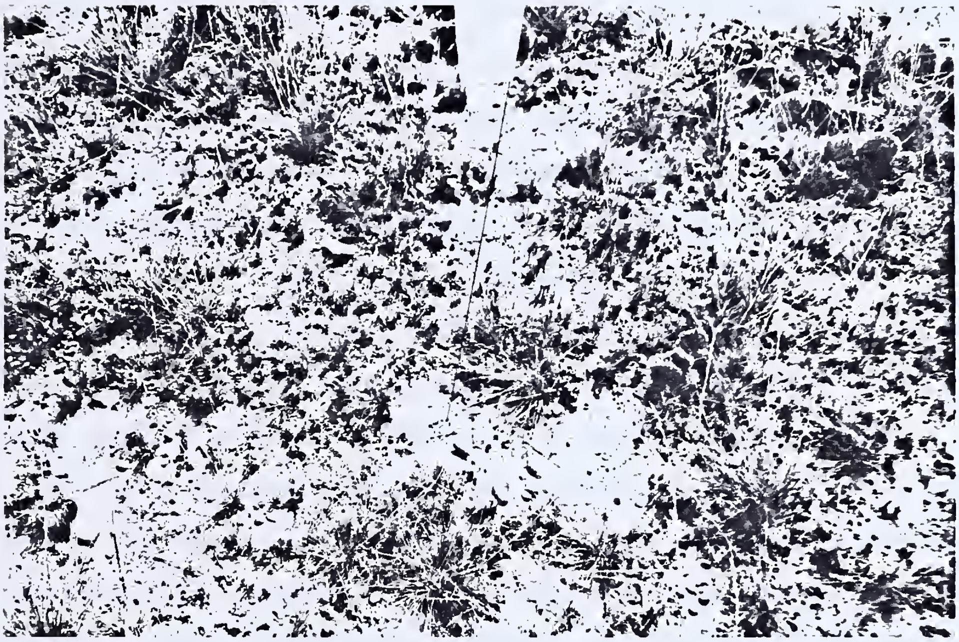


Figure 38. Site 24CR669 ground surface with flag marking fire-broken rock adjacent to Test Unit 6.

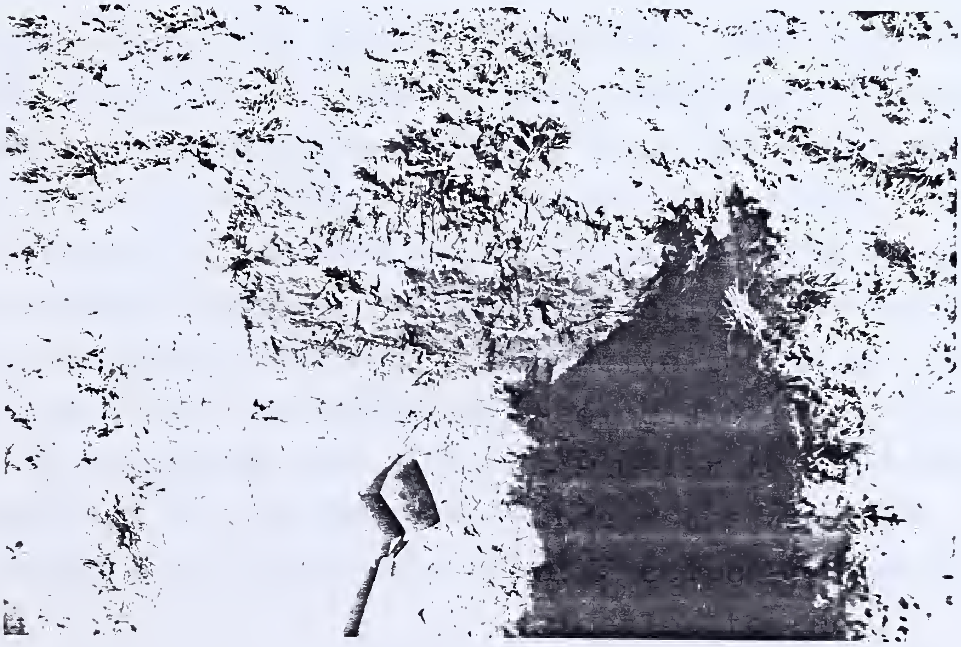


Figure 39. North wall profile of Test Unit 6 at site 24CR669.

the local area. Also, the remains of the mine lack physical integrity (i.e., adits, tunnels and living quarters have collapsed), and can no longer be considered representative of the historically significant activity of small-scale coal mining. Similarly, the prehistoric cultural material observed at the site lacks depositional integrity, and there are no indications that the prehistoric component contains additional significant information concerning the prehistory of the area.

Reclamation work at the Sunday Creek North area will include excavation and filling of the subsidence holes and open adits, neutralization and burial of the coal slack pile, and revegetating of all areas disturbed during the reclamation work. The preliminary reclamation plan indicates that disturbance will be limited to the area within 100 feet of the specific features to be reclaimed. HRA recommends that no further cultural resource work be conducted at this site prior to reclamation of the mine.

4.3.1.2 Site 24CR670, Sunday Creek West Site

As stated above, the Sunday Creek West, East, and South project areas were not included in the pedestrian inventory. However, Spectrum Engineering prepared detailed topographic maps of the coal mines in each of these reclamation areas, and provided photographic documentation of the features at the site.

Mining-related remains in the Sunday Creek West area (Figure 40) include two adits (Features 1 and 2), a series of subsidence holes (Features 3-6), two sparse scatters of trash (Features 7 and 8), and an excavated area (Feature 9). The adits accessed the coal seam from the cutbank of Sunday Creek, and the subsidence areas are located on a hill slope above the cutbank.

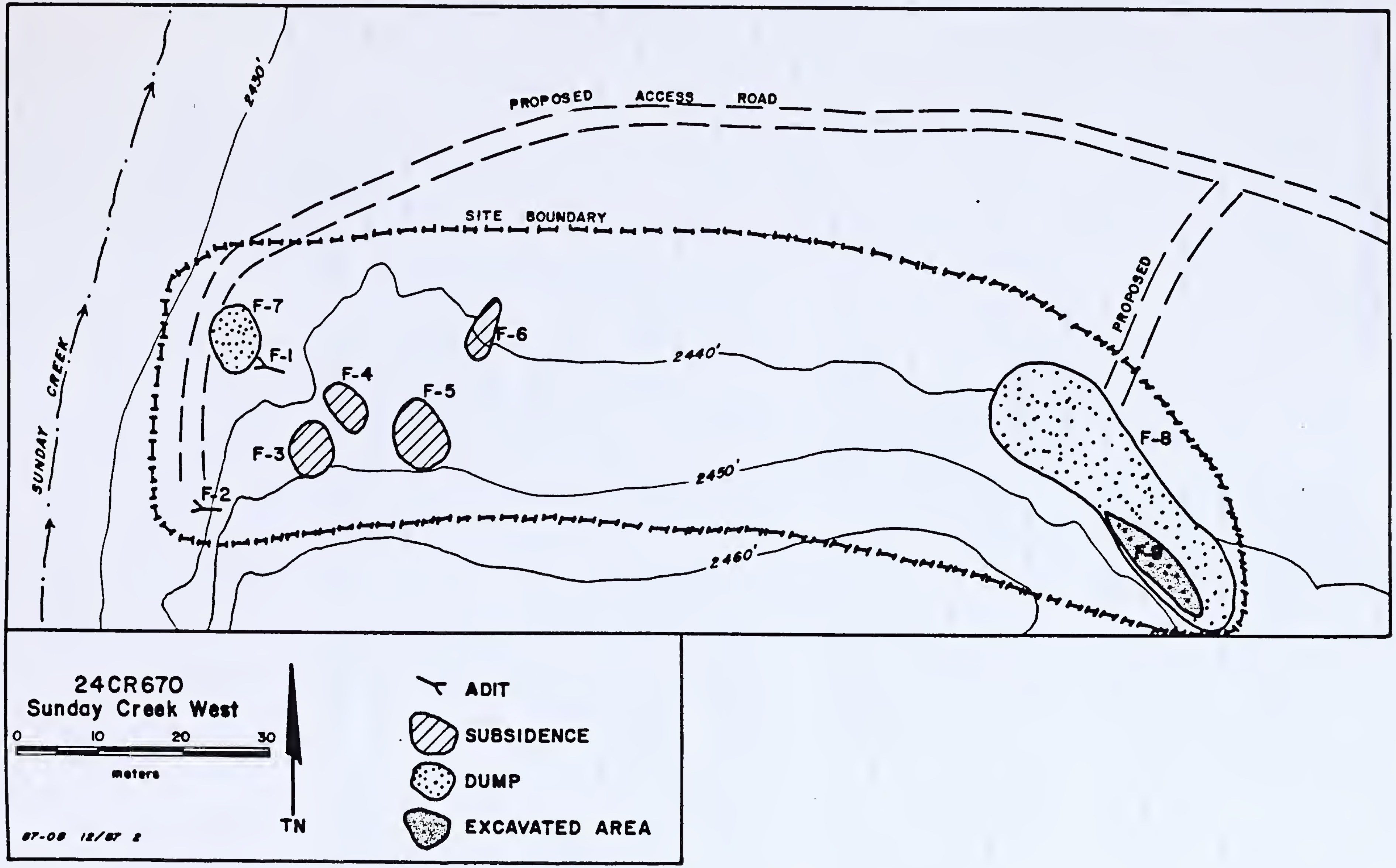


Figure 40. Plan map of site 24CR670, Sunday Creek West.

Historical Development. Little is known regarding the mining in this area. There is no record of a coal lease in the historical index maintained by the BLM office in Billings, and none of the Moore family members (the current landowners) could comment on when or by whom the mine was operated, other than that it was most likely mined prior to the 1940s (T. Moore 1987; C. Moore 1987; Mehrer 1987). It is likely that this site represents the remains of a small wagon mine, operated by one or a few individuals for local consumption.

Evaluation and Recommendation. Based upon the current condition of the features at site 24CR670, it does not appear to be eligible for nomination to the National Register of Historic Places. The site remains lack physical integrity (the two adits at the site have either partially or entirely collapsed), and there is little chance that the site remains contain additional significant information.

Reclamation at this site will consist of back-filling and/or sealing the entrances to the adits and the subsidence holes, and regrading of the side slope of the excavated area. All of the disturbance will be limited to an area within 50 feet of the features to be reclaimed. All areas disturbed as a result of reclamation (including additional access roads) will be seeded, fertilized and mulched. A pedestrian inventory of the area of impact associated with reclamation of this site will have to be performed prior to proceeding with the reclamation work. If no additional sites are located during that survey, or if additional sites are determined to be ineligible for the National Register of Historic Places, HRA recommends that the reclamation project be allowed to proceed.

4.3.1.3 Site 24CR671, Sunday Creek East

The Sunday Creek East site is located immediately southeast of the Sunday Creek West site. Remains associated with coal mining include an adit (Feature 1), several subsidence areas (Features 2-6), a coal slack pile (Feature 7), two piles of lumber which may represent collapsed structures (Features 8 and 9), and an excavated area (Feature 10) (Figure 41).

This site is located on the edge of a dissected terrace above Sunday Creek. The adit accesses the coal seam from the edge of the terrace, possibly on an incline. The subsidence holes are located on the sloping edge of the terrace west of the adit, and the remaining features are located on the other side (west of a two-rack access road). The location of the structural remains in an area slightly removed from the remaining mine features may indicate that there was a definite living area at the site.

Historical Development. As with the Sunday Creek West site, none of the interviewed members of the Moore family could associate a name or date of mining with this area. Also, the historical index maintained by the BLM office in Billings contains no record of a coal lease or permit in this area. It is likely that the features located at this site represent the remains of a small wagon mine.

Evaluation and Recommendation. This site does not appear to be eligible for nomination to the National Register of Historic Places. The lack of recognition by local residents familiar with the area may in itself indicate that the site is not associated with individuals or events of historical significance. Also, the site lacks physical integrity and, therefore, has lost its ability to adequately represent the historically significant activity of small scale coal mining.

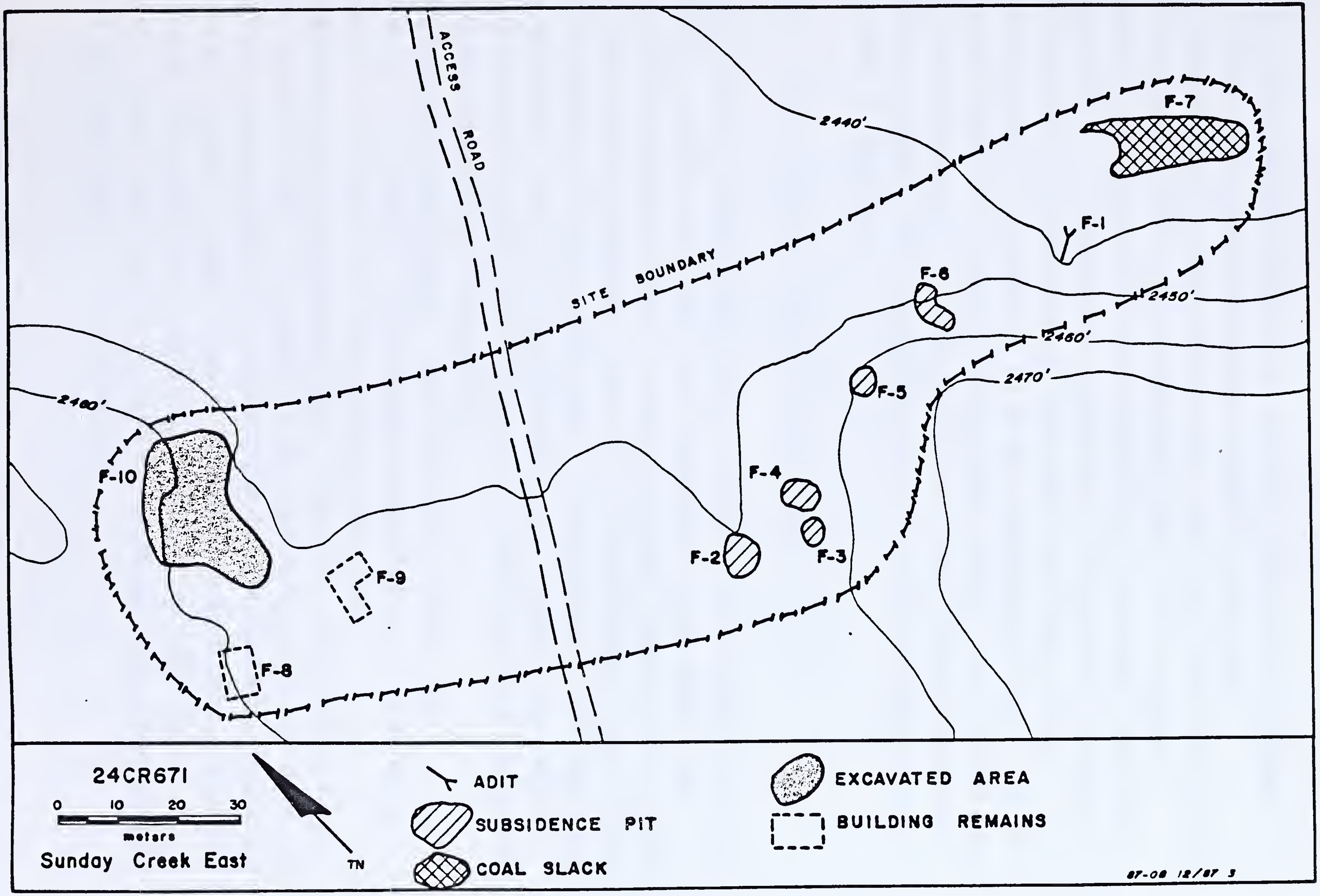


Figure 41. Plan map of site 24CR671, Sunday Creek East.

The preliminary reclamation plan for this mine includes back-filling of all the subsidence holes and the adit, neutralization of the coal slack pile, and use of the structural debris for back-filling the excavated areas. All areas of disturbance resulting from reclamation will be seeded, mulched, and fertilized. A pedestrian inventory of the area of impact associated with reclamation of this site will have to be performed prior to proceeding with the reclamation work. If no additional sites are located during that survey, or if additional sites are determined to be ineligible for the National Register of Historic Places, HRA recommends that the reclamation project be allowed to proceed.

4.3.1.4 Site 24CR672, Sunday Creek South

This small reclamation area is located on the south side of Highway 22, at the toe slope of a dissected ridge above the Sunday Creek drainage bottom. Mining-related remains are limited to two open adits (Features 1 and 2); two subsidence areas, one of which appears to be located over a former entry into the coal seam (Features 3 and 4); a coal slack pile (Feature 5); and an area excavated into the side of the hill that may have contained a structure (Feature 6) (Figure 42).

Historical Development. HRA could not obtain any information to identify individuals responsible for mining in this area, or at what time the mining took place.

Evaluation and Recommendation. Like the other three sites in this project area, it appears that this site does not meet the eligibility requirements for nomination to the National Register of Historic Places. Even if more information had been available concerning the history of the site, the lack of physical integrity limits the site's ability to represent the historical activities with which it is associated.

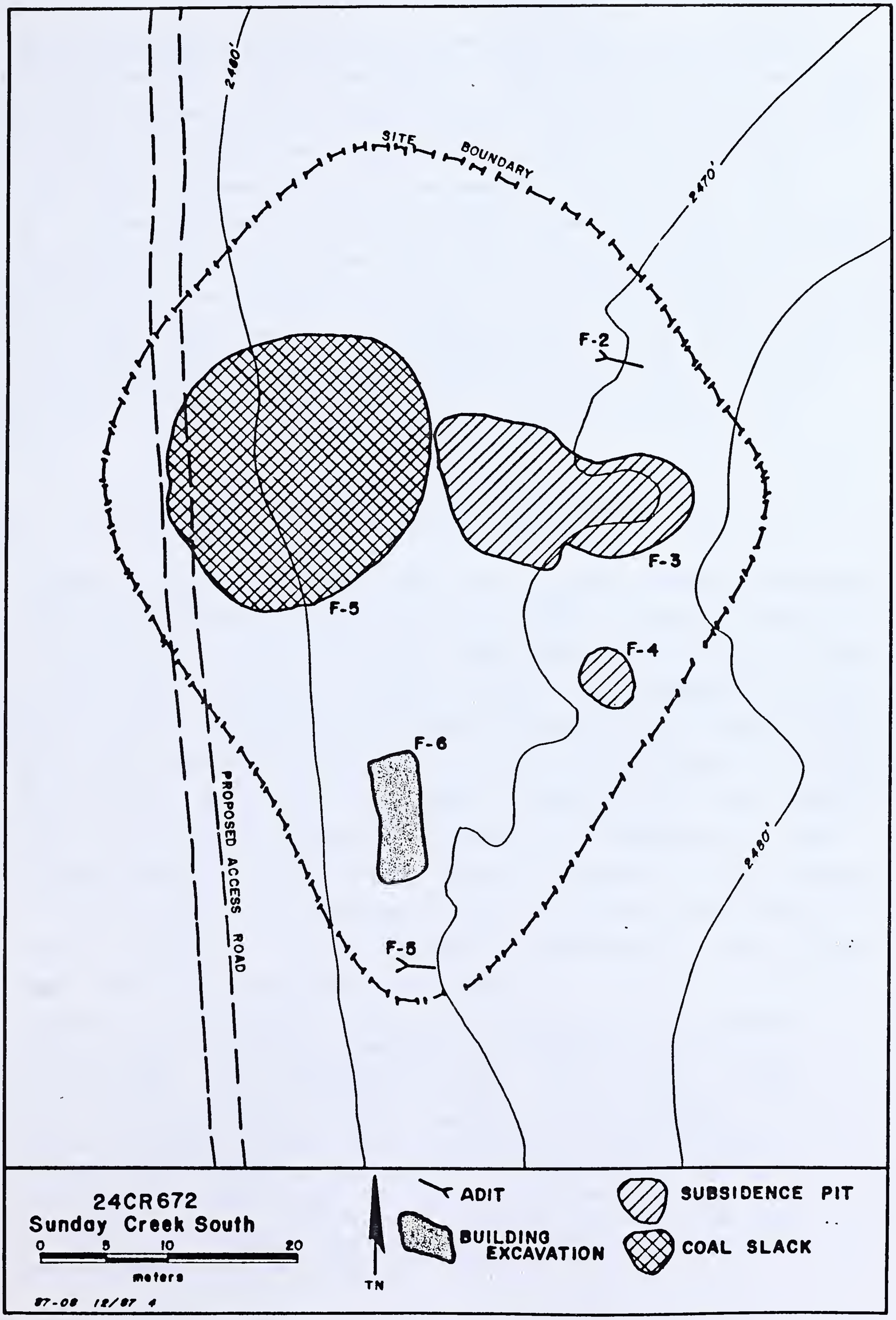


Figure 42. Plan map of site 24CR672, Sunday Creek South.

The preliminary reclamation plan for this site includes sealing of Feature 2 (the open adit), back-filling and regrading of the side slopes of subsidence areas, disposal of debris and neutralizing the coal slack pile. All areas of disturbance resulting from reclamation will be seeded, fertilized, and mulched. A pedestrian inventory of the area of impact associated with reclamation of this site will have to be performed prior to proceeding with the reclamation work. If no additional sites are located during that survey, or if additional sites are determined to be ineligible for the National Register of Historic Places, HRA recommends that the reclamation project be allowed to proceed.

4.3.2 Hay Creek 30 Project Area: Site 24CR673

The Hay Creek 30 project area lies in the extreme northwest corner of Custer County, near the point where Rosebud, Garfield, Custer, and Prairie Counties meet. The site lies within a fork of the Wolf Creek drainage, which in turn is a tributary of Hay Creek and part of the Missouri River drainage basin (Figure 43).

Although none of the early U.S. Geological Survey Bulletins deal specifically with the Hay Creek 30 reclamation area, this locality lies directly adjacent to the north boundary of the Little Sheep Mountain Coal Field, first discussed in 1911 (Rogers 1913). The bedrock outcroppings in this area are part of the Fort Union formation. In the township immediately south of the site, the coal is described as follows:

> Bed HH, ... is fairly thick, containing in the western part of the township a maximum of 8 feet of coal.... To the east, its thickness is less, and in sec. 1 it carries only about 3 feet of coal. ... As shown on the map, it is exposed in this township only in deep coulees, which dissect the north side of the divide [between the Yellowstone and Missouri River drainages]. Its outcrop, except at the head of these ravines, is generally burned. In several coulees, notably in the westernmost, considerable stripping has been done by the ranchers in the vicinity (Rogers 1911:196).

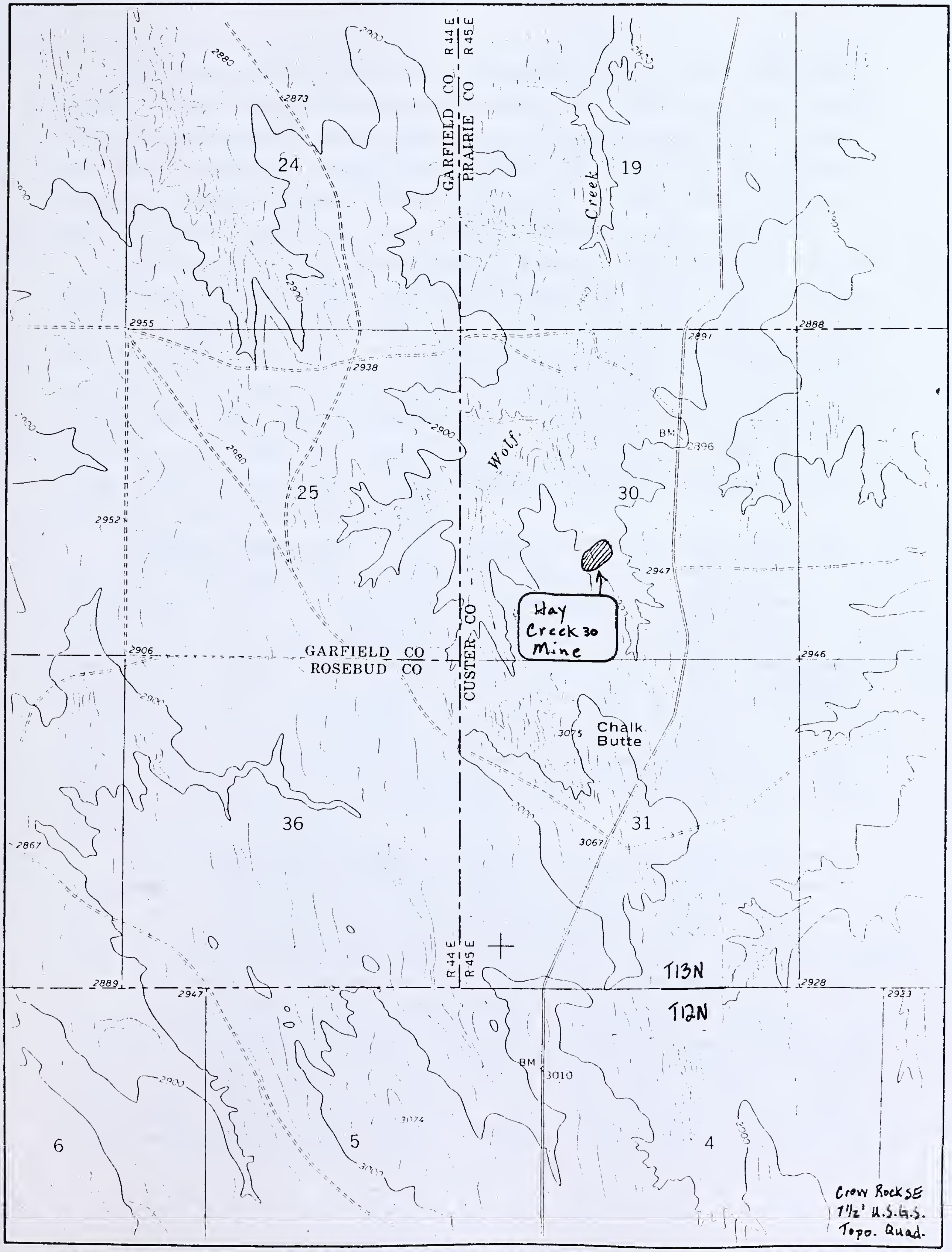


Figure 43. Copy of USGS Crow Rock SE topographic map showing location of the Hay Creek 30 project area.

The Hay Creek 30 site lies directly north of the northwest corner of the township described above, and the coal being mined there may represent an extension of the beds described. Since the area is about 45 miles from Miles City and 18 miles distant from the nearest timber (Rogers 1911:197), local coal probably was the most convenient and readily available fuel resource.

The survey of the Hay Creek 30 project area resulted in the recording of site 24CR673, a multi-component site. Most of the features associated with the coal mine at this locality are found in the bottom of a dry coulee, but an air shaft and a subsidence area over an adit are located on the side slope and on top of the ridge above the coulee (Figure 44). A sparse scatter of lithic material was found near the edge of the subsidence over the adit; thus, both the prehistoric and historic components were recorded together under one site number.

Historic Component. The cultural remains associated with the coal mine operation include two rectangular excavations (Features 1 and 2) located in the side slope of the coulee (Figure 45), an adit (Feature 4) with an associated area of subsidence (Figure 46), a waste pile with coal slack (Feature 3) located in front of the adit (see Figure 45), and an air shaft (Feature 5) located slightly upslope and to the west of the adit. Parts of a cast iron cook stove lie within and adjacent to the Feature 1 dugout, and may indicate that the feature at one time functioned as a shelter.

Historical Development. Little information was obtained concerning the history of this site. The HRA field crew was referred to Carl Hirsch, a long-time resident of the area, as someone familiar with the mine. Mr. Hirsch (1987) indicated that the mine was first opened by Mike Schmitt. The parcel of land that contains the site is included in the homestead entry patented by Michael Schmitt in November 1926 (Custer County Land Status Records, Office of the Clerk and Recorder, Custer County Courthouse, Miles City, Montana). The coal on this parcel was reserved to the United States. However, the State Office of the

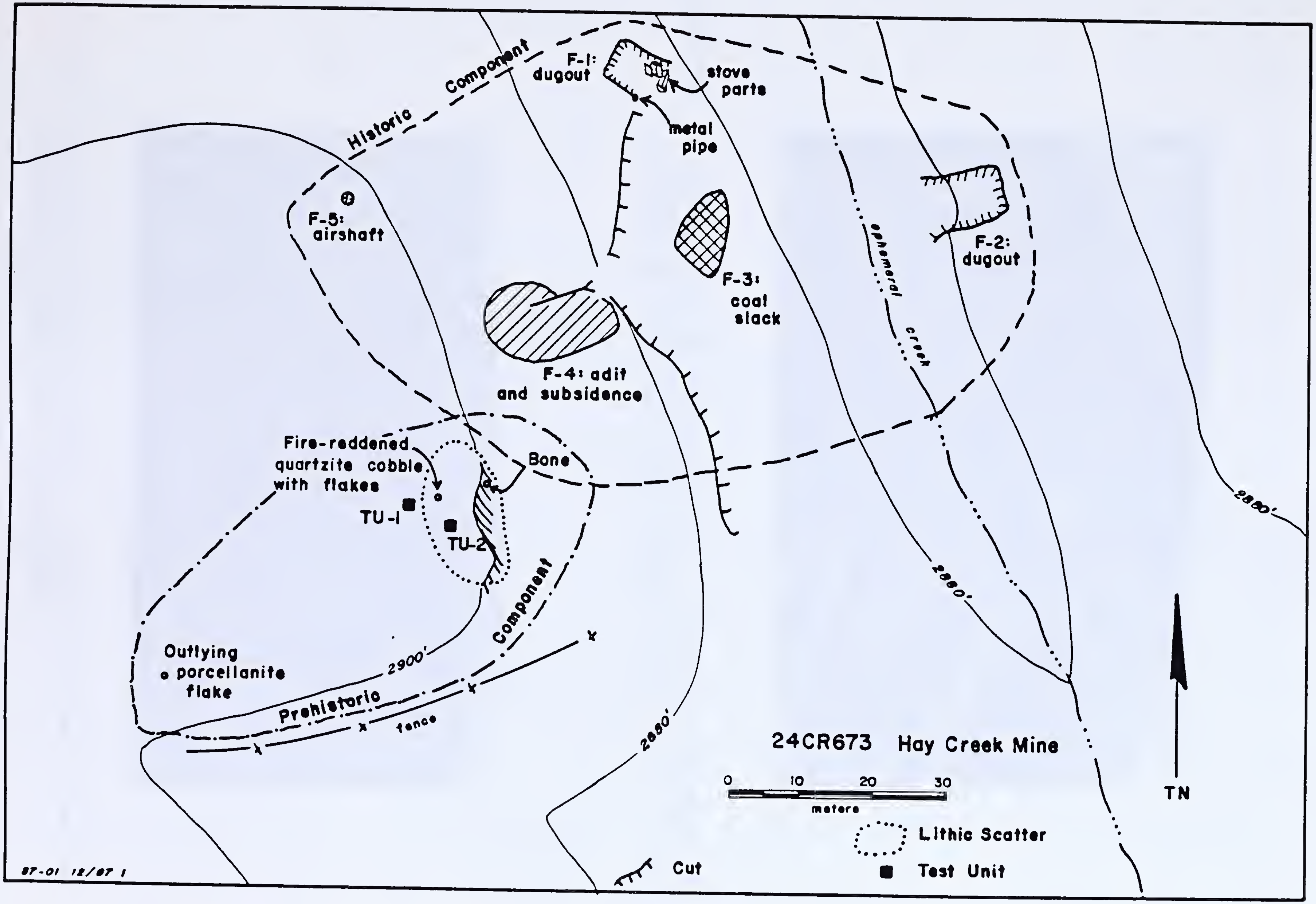


Figure 44. Plan map of site 24CR673 in the Hay Creek 30 project area.

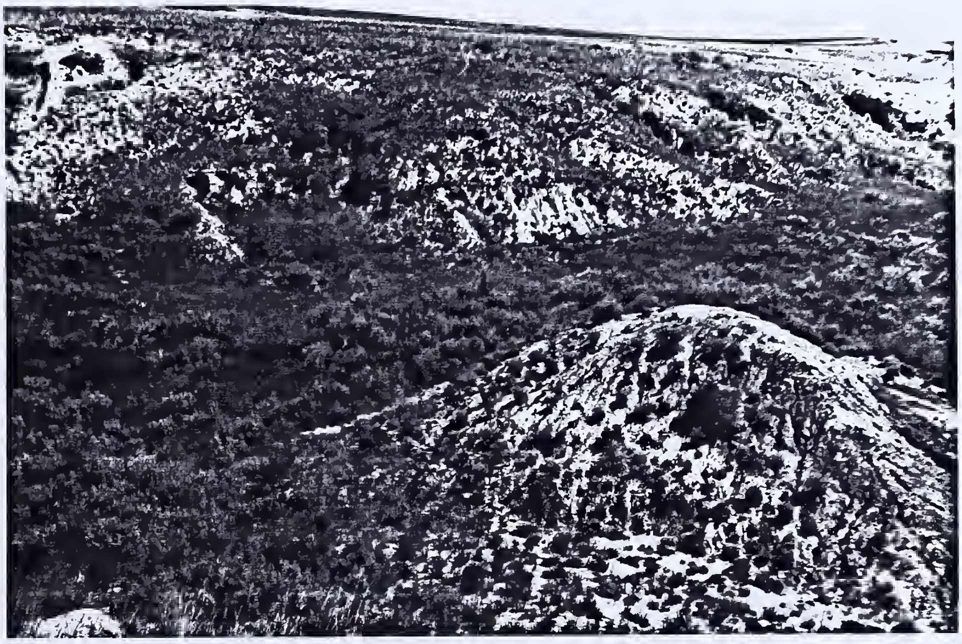


Figure 45. Looking east at site 24CR673. Feature 2 (dugout) is located in side of coulee and Feature 3 (waste pile) is located in lower right corner of photo.

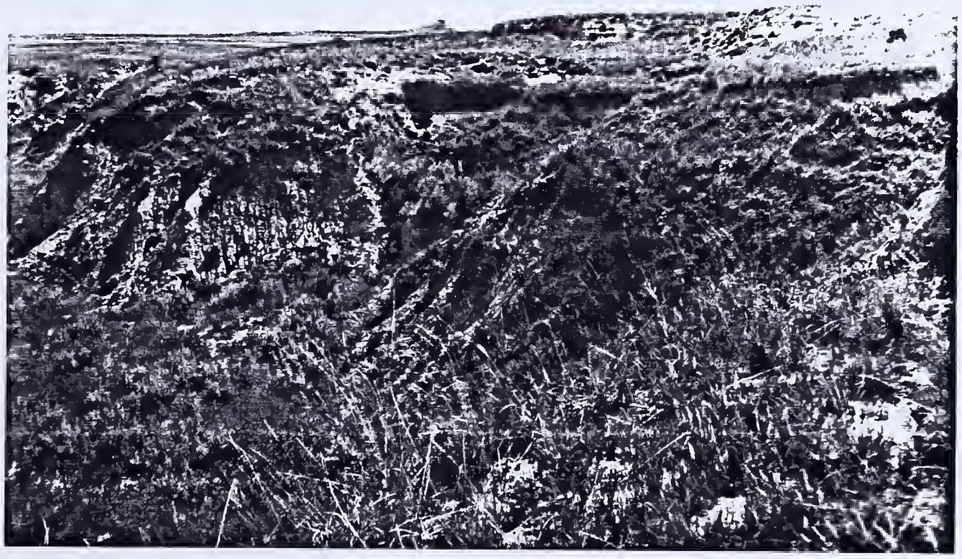


Figure 46. Overview of site 24CR673, looking southwest towards Feature 1 (adit with subsidence).

BLM has no record of a coal lease or permit for the area. Probably, the coal was mined in trespass, for local consumption.

Mr. Hirsch (1987) also indicated that a person named Bill Sauder (or Saunder?) mined the area during the 1930s, and hauled the coal to Miles City to supply a Civilian Conservation Corps (CCC). The Miles City CCC camp operated from 1933 until 1942 (CCC information file, Lolo National Forest, Cultural Resource Management files), so Sauder's tenure at the mine could have taken place any time within this ten-year period.

In addition, Bud Taylor, whose family has owned the land containing the site since the 1950s, indicated that he worked at this mine during the 1930s. The Taylor family extracted the coal only for their own fuel needs (Taylor 1987).

Prehistoric Component. The prehistoric component of this site consists of a sparse scatter of lithic material located at the edge of the ridge top immediately above the coulee that contains the coal mine (Figure 47). The predominant material type is grey porcellanite, with flakes that range in size from less than 1 cm to 4cm in length (n=26). Most of these are interior flakes. However, the larger flakes display cortex on one or more surfaces. In addition to the porcellanite, one piece of light and dark brown mottled chalcedony was found at the site. One fragment of a reddened quartzite cobble also was observed on the surface of the site. A small piece of bone (rib fragment) was found protruding from the cutbank below the lithic material, but it is unclear as to whether or not this material was culturally or naturally deposited.

All of the cultural material was observed in eroded context. The ground surface in this area has the hard-packed, smooth appearance that results from the evaporation of standing water, and the cultural material lies either on top of or partially protruding from this surface (Figure 48).

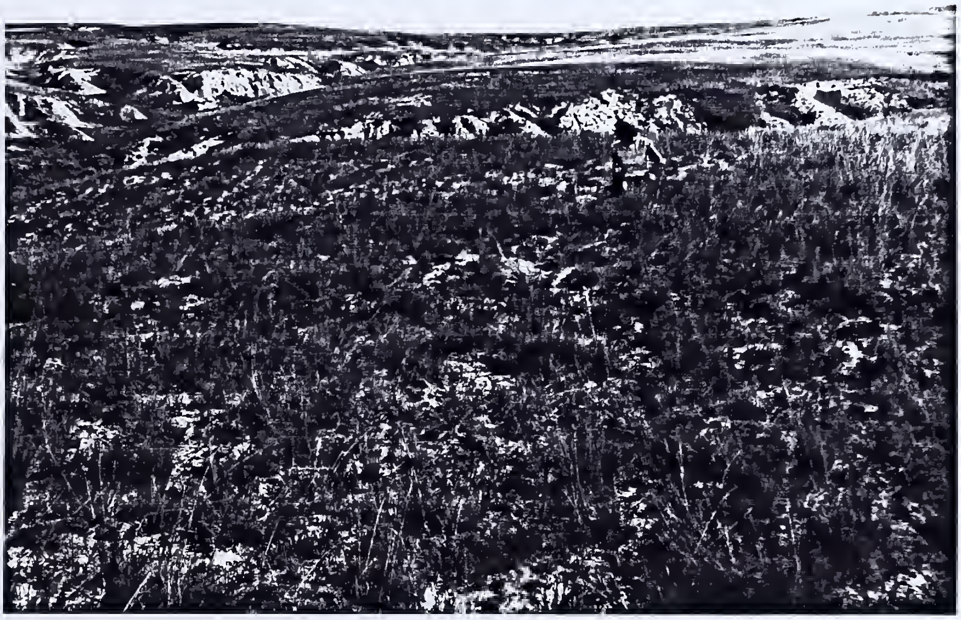


Figure 47. Overview of site 24CR673 area with prehistoric remains.

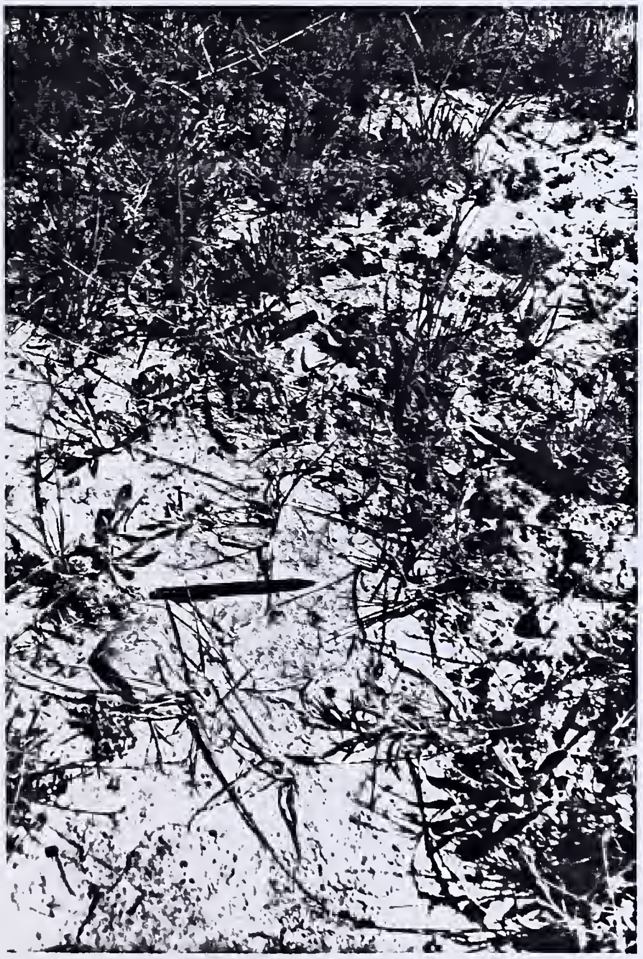


Figure 48. Ground surface of site 24CR673 showing hard-packed soil. Pencil, pen and pen top mark locations of fire-broken rock and flakes.

Subsurface Testing. In order to determine the presence or absence of additional cultural material within the site, the HRA field crew excavated two 50cm x 50cm test units. The first test unit was excavated 12 meters back from the edge of the terrace, in an area where the sod layer remained intact. The first 10 cm of this unit produced very sandy soils with a very few small pieces of angular reddish sandstone. A few areas of reddish stain (associated with the deterioration of iron-rich concretions) occur in this first level. The light yellowish-brown sandy silt continues to a depth of 30 cm, becoming more moist with depth (Figure 49). No cultural materials were recovered from Test Unit 1.

Test Unit 2 was excavated closer to the terrace edge, in an eroded area that contained cultural material on the adjacent ground surface. The first 10 cm of matrix from this unit is similar to that in Test Unit 1 -- light yellowish-brown sandy silt with some clay. From 10-20 cm below surface, the unit contained larger rocks and some small pockets of stain, again from what appears to be disintegration of small concretions. There is no patterning to these small stains, which continued to the bottom of the test unit at 30 cm below surface (Figure 50). No cultural material was recovered from this test unit.

In addition to excavating the two test units, the HRA field crew shaved back the face of the cutbank in order to expose further indications of cultural material. No artifacts or features were observed in the cut bank to a depth of approximately 2 meters below the surface (Figure 51). Whether or not the presence of the bone in the cut bank results from prehistoric cultural material is unknown.

Evaluation and Recommendation. Neither the prehistoric or the historic component at site 24CR673 appear to be eligible for nomination to the National Register of Historic Places. Very little remains of the historic component of this site, and

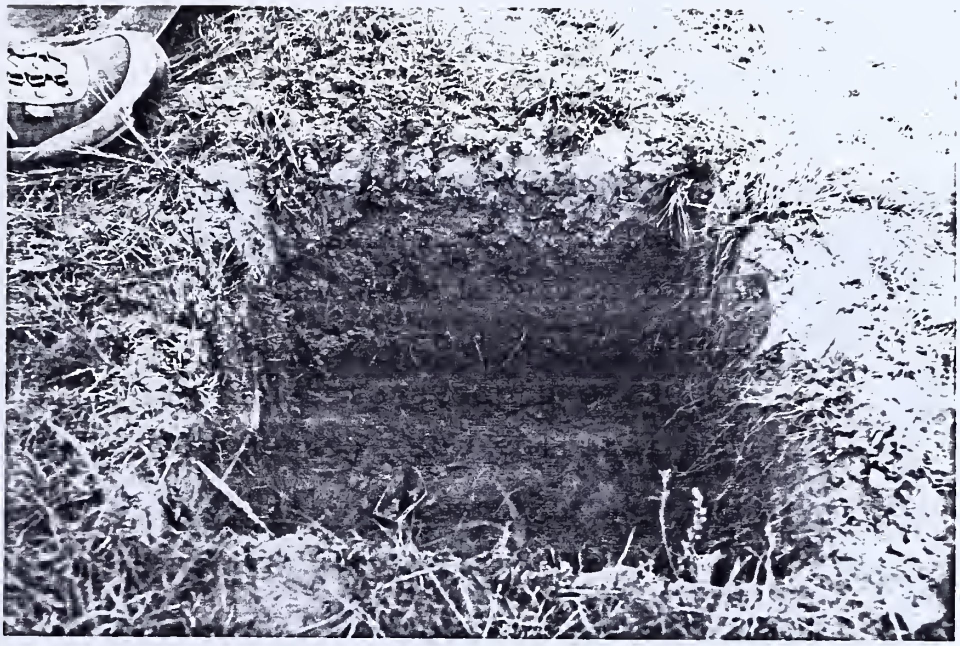


Figure 49. North wall profile of Test Unit 1 at site 24CR673.

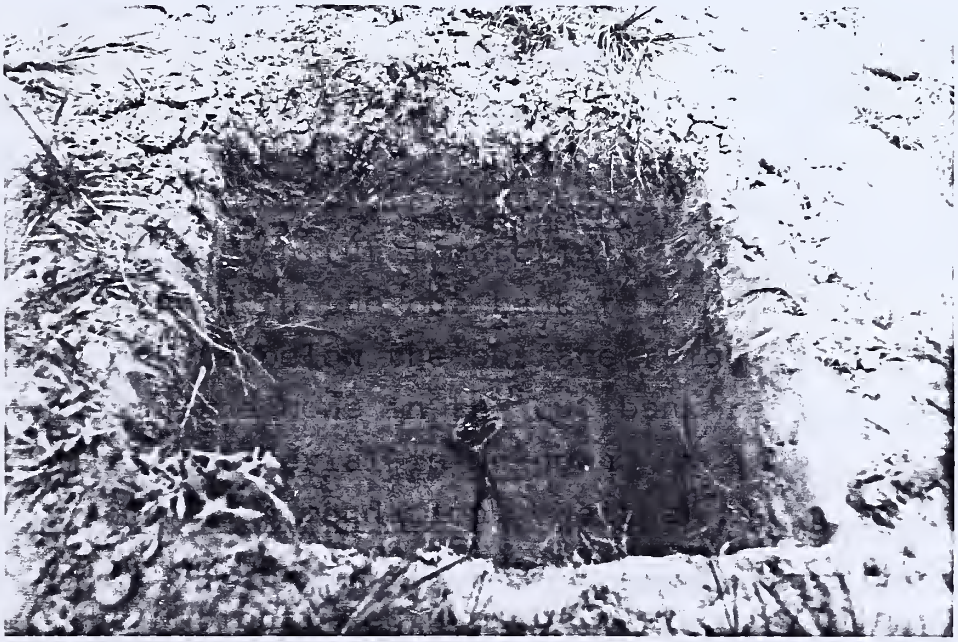


Figure 50. North wall profile of Test Unit 2 at site 24CR673.

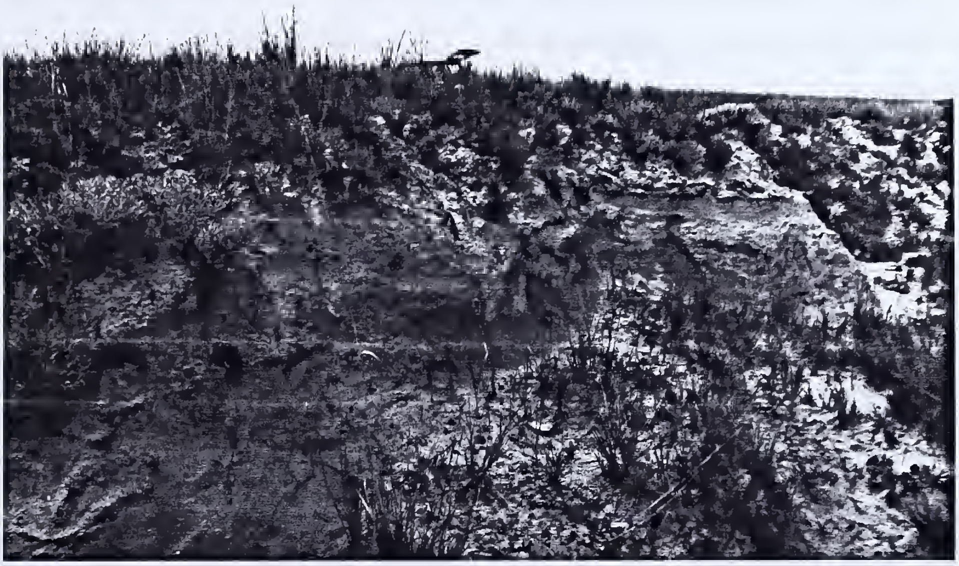


Figure 51. Cutbank at edge of terrace below cluster of prehistoric cultural material at site 24CR673.

although it appears that the mine was operated intermittently for a number of years, there is no documentation that definitely links this mine to significant individuals or specific events. Also, the remains at the site lack physical integrity, thus limiting its ability to adequately represent the more general, historically significant activity of small-scale local coal mining.

Similarly, the prehistoric component at this site does not appear to contain significant information that would contribute to our understanding of the prehistory of the area. No temporally diagnostic cultural material was observed at the site, and the results of subsurface testing indicate that no buried remains are present within the area to be impact by reclamation.

Reclamation at this site will likely include back-filling of the subsidence areas, neutralization of the coal slack pile, and regrading the sides of the two excavated areas so that they are able to hold vegetation. All areas of disturbance that result from reclamation activities will be seeded, fertilized and mulched. HRA recommends that no further cultural resource work be conducted at this site prior to reclamation.

4.4. Garfield County Reclamation Areas

Reclamation areas in Garfield County include the Chalk Butte, Pike's Peak, Earl Lane, Robert Lane, and Haxby projects. Three of the five reclamation sites in Garfield county (Pike's Peak, Robert Lane, and Earl Lane) cluster in the vicinity of Jordan. However, the Chalk Butte site is located adjacent to the southern boundary and the Haxby site is located near the northern boundary of the county. Four of the reclamation sites (Pike's Peak, Earl Lane, Robert Lane, and Chalk Butte) accessed coal from the Fort Union Formation. These four sites are located in areas that can be described as gently rolling, heavily dissected, grassland prairie. The Haxby project area is located in a region where the bed rock outcropping at the surface is part of the Hell Creek Formation. This formation is less well known for its coal lenses than for the fact that it contains the remains of dinosaurs. However, both lignite and sub-bituminous coal is found in thin lenses in the Hell Creek formation.

Very little general information is available regarding coal mining in Garfield County. General references to the region are found in U.S. Geological Survey Bulletin 321, published in 1906. The reconnaissance survey that resulted in the 1906 publication included the area along the stage road between Miles City and Jordan, the northern half of which is now known as Garfield

County, but which was then part of Dawson County. Besides mentioning "many coal beds within a few miles of the stage road" (Leonard 1906:208), there are no specific references to the localities under consideration in this report.

4.4.1 The Chalk Butte Reclamation Area

The Chalk Butte location is one-half mile from the Hay Creek 30 site discussed above (Figure 52). Currently, nothing remains in the area that would indicate the presence of a coal mine. Apparently, several entries into a coal seam were once located in a coulee bottom, but the HRA field crew found nothing to indicate their former location. Apparently, the only features to be reclaimed at this site are two natural fissures on top of the ridge above the coulee (Figure 53). These fissures, which appear to be about 4 feet deep, mark the location of a coal seam that burned until the late 1950s. Although the coal seam is no longer burning, the fissures along the top of the ridge remain open, and reclamation presumably will consist simply of filling in the fissures. According to Dallas Taylor (1987), lightning probably started the fire in the coal seam, which halted mining at this location. The burning of the coal seam may have caused the mine adits to collapse relatively quickly, and the area to revegetate to the point where the mine is no longer distinguishable.

Historical Development. The parcel of land that contains the Chalk Butte location was originally patented by the Northern Pacific Railway Company in 1913. Ownership of the coal went to the railroad with the surface rights, and any mining in the area would have been arranged with the railroad, unless the coal was mined in trespass. No specific information was found regarding the extraction of coal from this area. It probably was mined for local use only, perhaps during the 1930s or before.

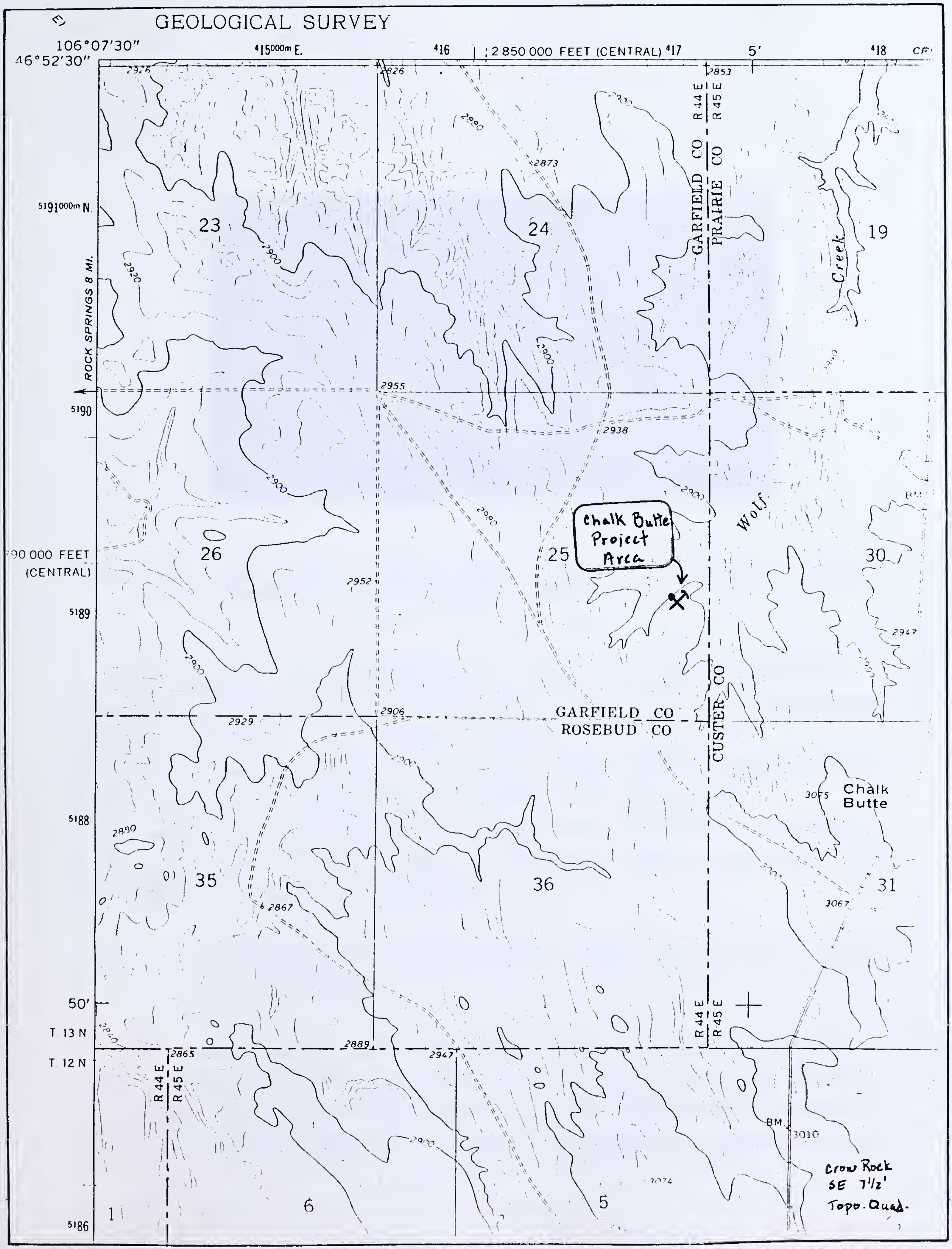


Figure 52. Copy of USGS topographic map showing location of Chalk Butte project area.

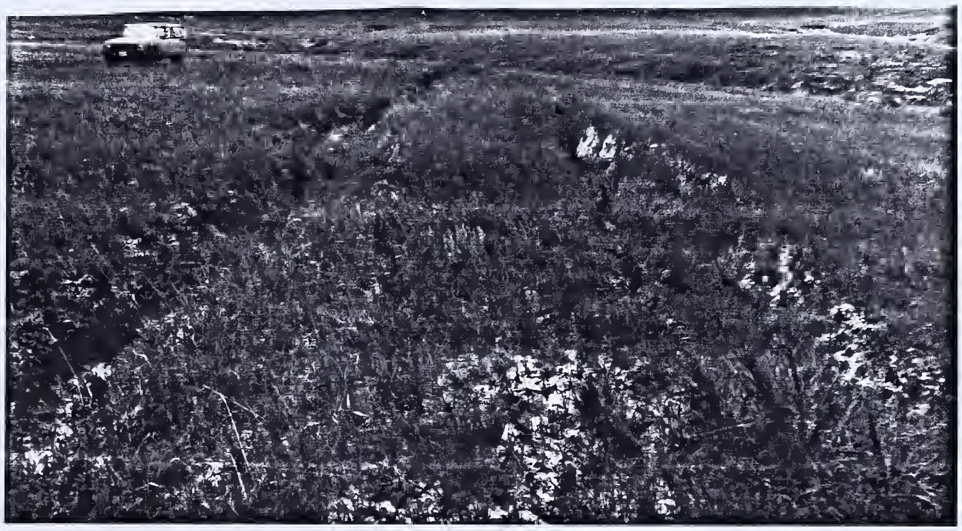


Figure 53. Overview of Chalk Butte project area showing fissure created by burning coal seam.

Evaluation and Recommendation. There is nothing left at this location to record as a cultural resource site, and no other cultural materials are located adjacent to the fissures. Therefore, the area was not assigned a Smithsonian number. The Chalk Butte project area does not meet the eligibility requirements for nomination to the National Register of Historic places, and HRA recommends that no further cultural resource work be conducted prior to reclamation.

4.4.2 Pike's Peak Reclamation Area: Site 24GR348, the Pike's Peak Coal Mine

This reclamation area is located adjacent to the town of Jordan, the Garfield County seat. It is located east of town in an unnamed, dry coulee that opens out onto the drainage channel of Big Dry Creek (Figure 54). The entire section containing the

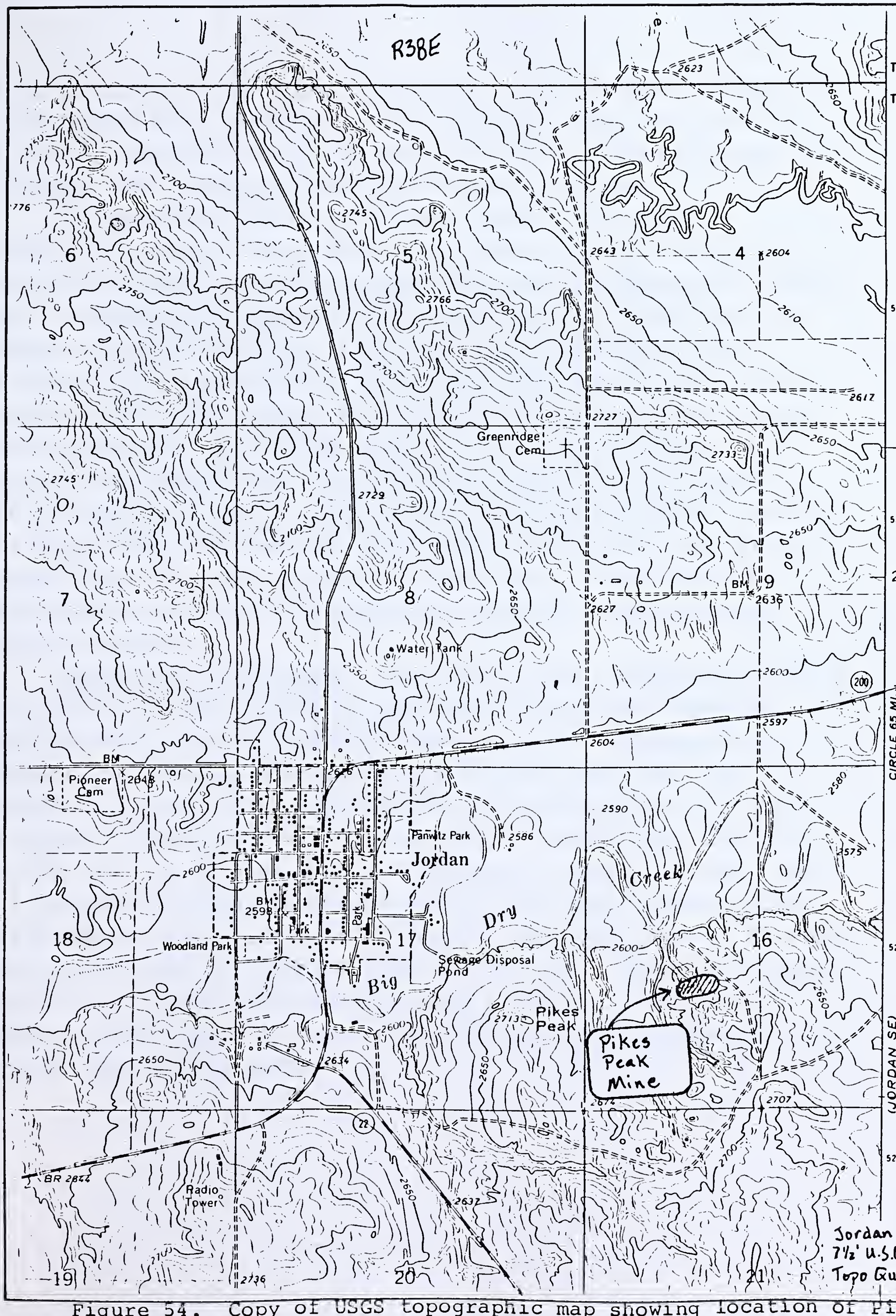


Figure 54. Copy of USGS topographic map showing location of Pike's Peak project area.

site is owned by the state of Montana, and for several years has been leased by a local family for grazing. The only cultural resource recorded during the survey of this project area was site 24GR348, the remains of the Pike's Peak coal mine.

Mining-related remains at this locality are fairly extensive, and the whole area has a rather desolate character, created by the weathering of soft coal-stained sediments (Figure 55). Northern Engineering, Inc., provided HRA with a copy of their reclamation plan prior to the field inventory, which included a topographic map of the site area showing preliminary reclamation plans (Figure 56). Mining-related features at this site consist of adits (Features 2, 3, 11, and 12; Figure 57), subsidence areas, many of which follow the course of tunnels (Features 4-6, 9 and 10, and 13-21; Figure 58), a shaft (Feature 7; Figure 59), the remains of a tipple (Feature 8), and several waste piles (Features 22 and 23; Figure 60). The tipple is distinctive in that it contains the remains of the hoisting system (Figure 61).

Historical Development. The Pike's Peak reclamation area is located on a parcel owned by the State of Montana. Records maintained by the DSL Minerals Leasing Bureau indicate that several different people mined coal at this site, and the different mine entries may reflect different periods of mining. William I. Powell was the first person to hold a coal lease (No. 19457) for all of Section 16. According to Barbara Smith (1987) of the Minerals Leasing Bureau, early state coal leases usually were granted for a period of 10 years. Records indicate that the expiration date of Powell's lease was in 1921; therefore, Powell could have obtained the lease as early as 1911. The State cancelled the lease in 1918, probably due to non-payment of rental fees (Smith 1987).

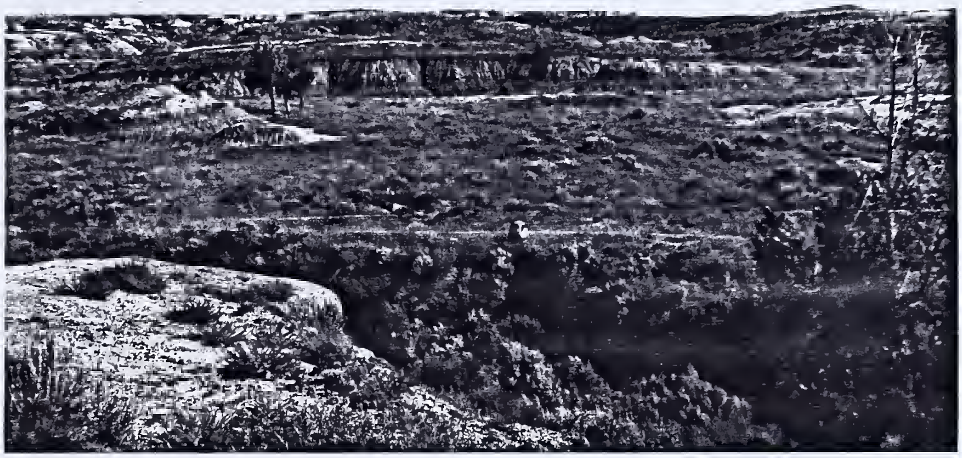


Figure 55. Overview of western edge of site 24GR348.

Although the records regarding subsequent lessees is unclear, several people seem to have had an interest in the state-owned coal in this section. These include Asa Norman (Lease No. 25796), who apparently worked the area in the early 1920s; Jesse Walker in 1929; and I.E. Jenkins, Peterson, and LaMoure in the early 1930s.

The local residents interviewed regarding this site knew nothing of its history and development. Mrs. Betty Cooley Olson, whose family has held the state grazing lease on this parcel for approximately the last 35-40 years, accompanied the HRA field crew to the project area to view the site remains. She indicated that, although her sons had mentioned the existence of the mine, she had never been to the area and knew nothing of its history (Olson 1987).

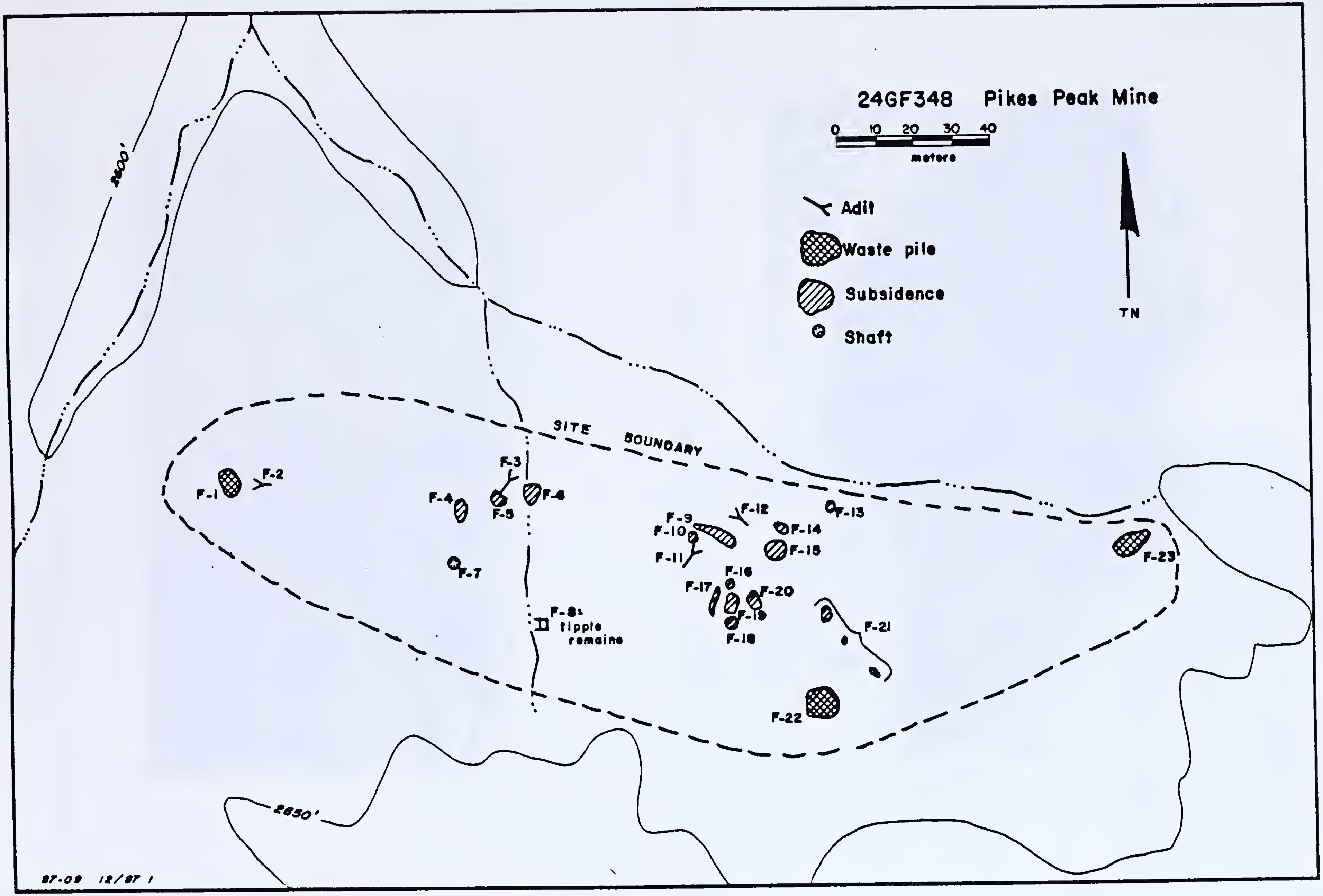


Figure 56. Plan map of site 24GR348.

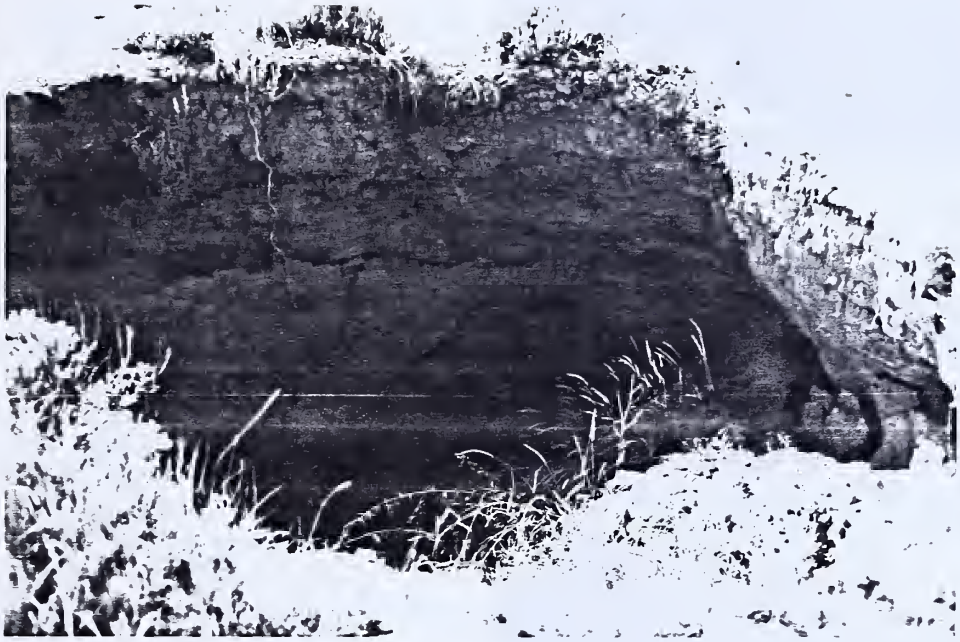


Figure 57. Feature 12 adit at site 24GR348.

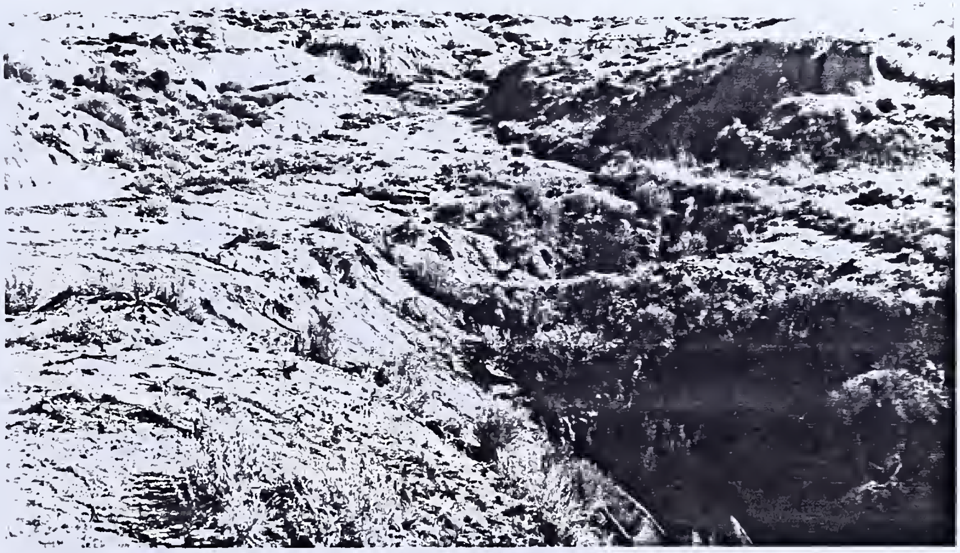


Figure 58. Looking south up a small coulee at site 24GR348, with Feature 6 subsidence area in foreground.

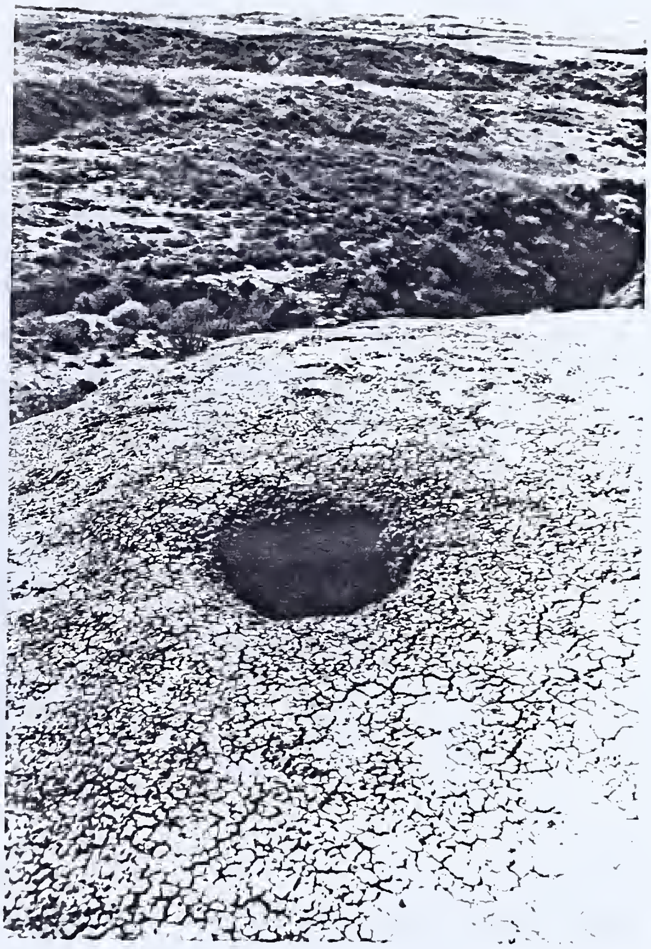


Figure 59. Feature 7 shaft at site 24GR348.

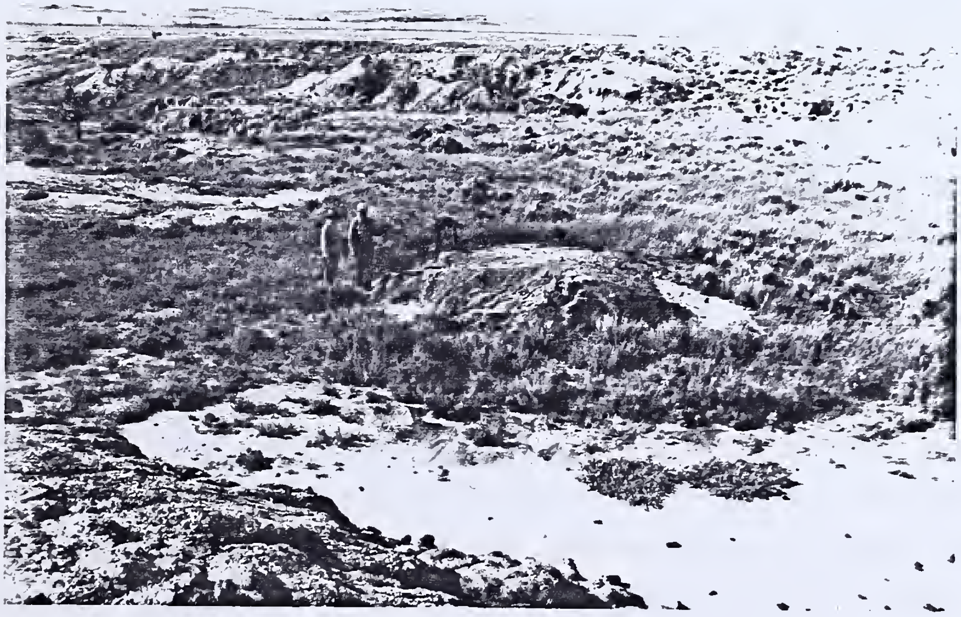


Figure 60. Looking north over Feature 22 waste pile at site 24GR348.

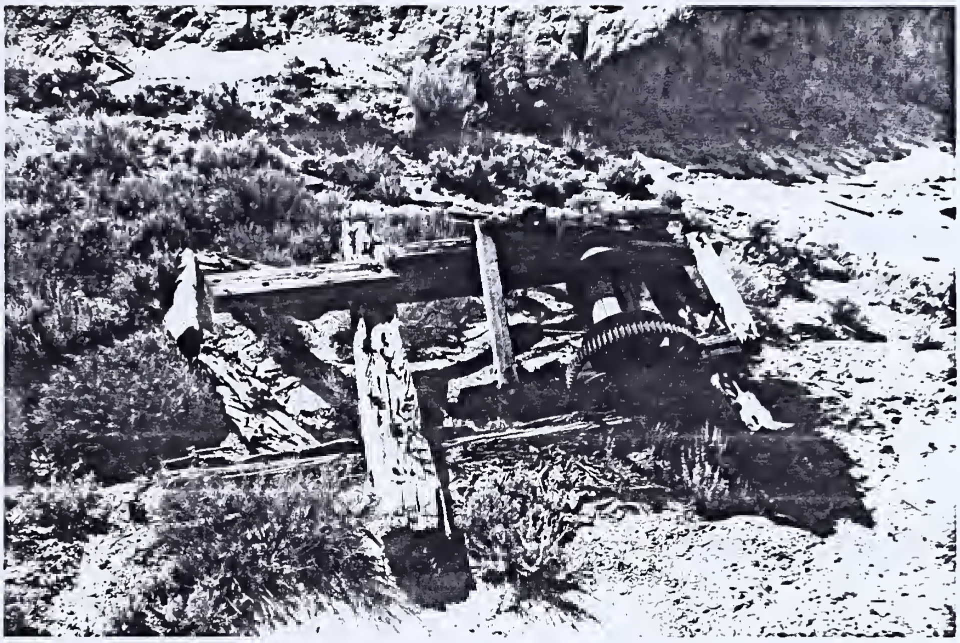


Figure 61. Remains of Feature 8 tipple with hoisting system at site 24GR348.

In addition, HRA contacted Phyllis Watt, a long-time area resident who is associated with the Garfield County Museum in Jordan. Although Miss Watt knew nothing of the existence of a mine on the outskirts of Jordan, she was familiar with the name of I.E. Jenkins, who is one of the last individuals listed in state records as having an interest in the coal in this area (Watt 1987). Apparently, Jenkins operated a general store in Jordan in the 1920s and 1930s. He may have marketed the coal as another service to the townspeople of Jordan.

Evaluation and Recommendation. This site does not appear to meet the criteria of eligibility for nomination to the National Register of Historic Places. HRA was unable to associate the mine with individuals or events of significance to the local community, state or region. Also, the lack of physical integrity

at this site limits its ability to represent the historically significant activity of small-scale coal mining for local consumption.

The reclamation plan for this site includes back-filling of subsidence areas, closure of adits, burial of waste piles, and removal of debris (i.e., the remains of the tipple). All areas of disturbance resulting from reclamation will be seeded, fertilized and mulched. Since no additional cultural resource sites exist in proximity to the proposed construction boundaries, we recommend that no further cultural resource work be conducted at this site prior to reclamation.

4.4.3 Robert Lane Project Area: Site 24GF349, Robert Lane Coal Mine

The Robert Lane reclamation site is located north of Jordan, on the south side of the ridge that forms the divide between Frazier Creek and Big Dry Creek (Figure 62). The area is characterized by rolling, heavily dissected ridges with many free-standing knobs and small buttes. The specific site locality is at the head of a dry coulee that opens into a southward flowing, intermittent tributary of Big Dry Creek (Figure 63). Only one cultural resource site, the remains of the Robert Lane coal mine (24GF349), was recorded during the survey of this reclamation area.

Four features were located at site 24GF349 (Figure 64). These include an open adit (Feature 1, Figure 65), two subsidence areas (Features 2 and 3) that follow the course of former tunnels, and a coal slack pile (Feature 4, see Figure 63). The operator of this mine excavated the three entries into a nearly vertical side slope at the head of the coulee, were the coal-bearing strata is clearly distinguishable in the hillside.

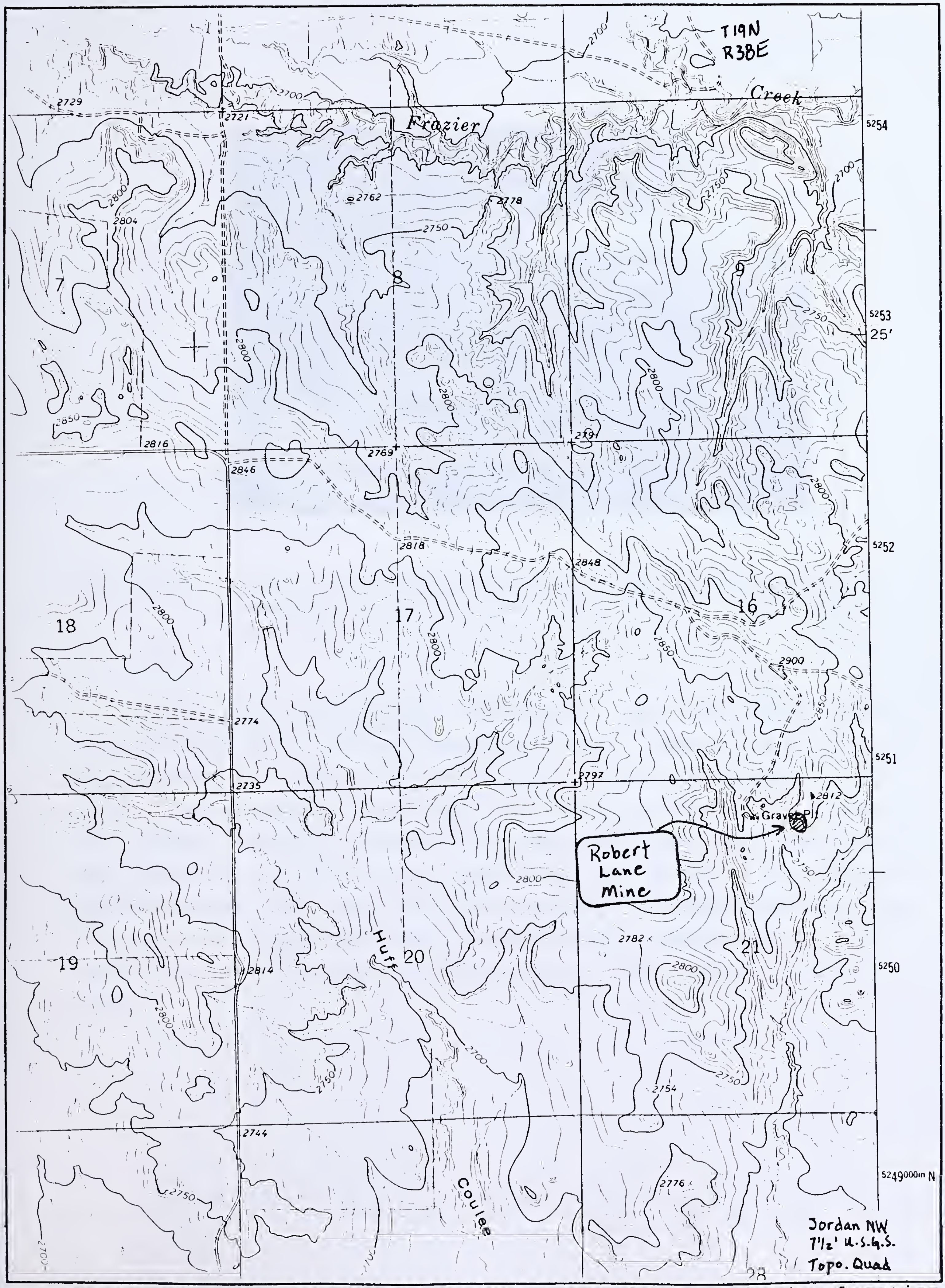


Figure 62. Copy of USGS Jordan NW topographic map showing location of the Robert Lane project area.

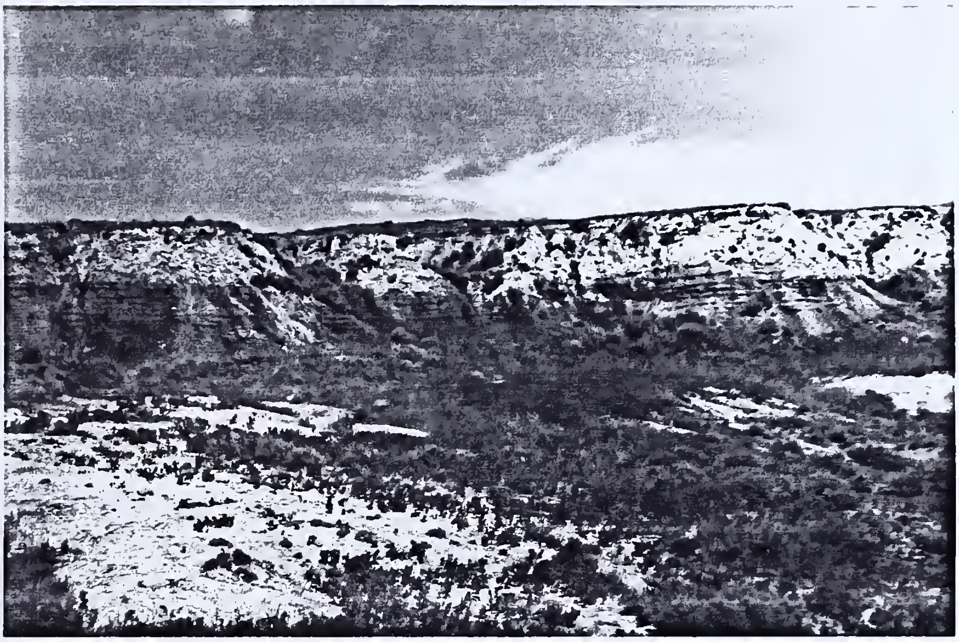


Figure 63. Overview of head of coulee with Robert Lane mine remains at site 24GF349. Note coal slack in center of photo.

Historical Development. Apparently, only one person mined coal at this site, during the early 1930s. Robert Lane filed an application for a permit to mine coal at this location in June 1930. The government cancelled the lease (No. 032299) in 1933 for unknown reasons (Federal Coal Lease records, BLM, Billings). The BLM master list of major abandoned coal mines in the State of Montana shows that coal was both stripped and undermined at this location, and that the total production was approximately 200 tons (indicating a rather short-lived or small operation at the mine).

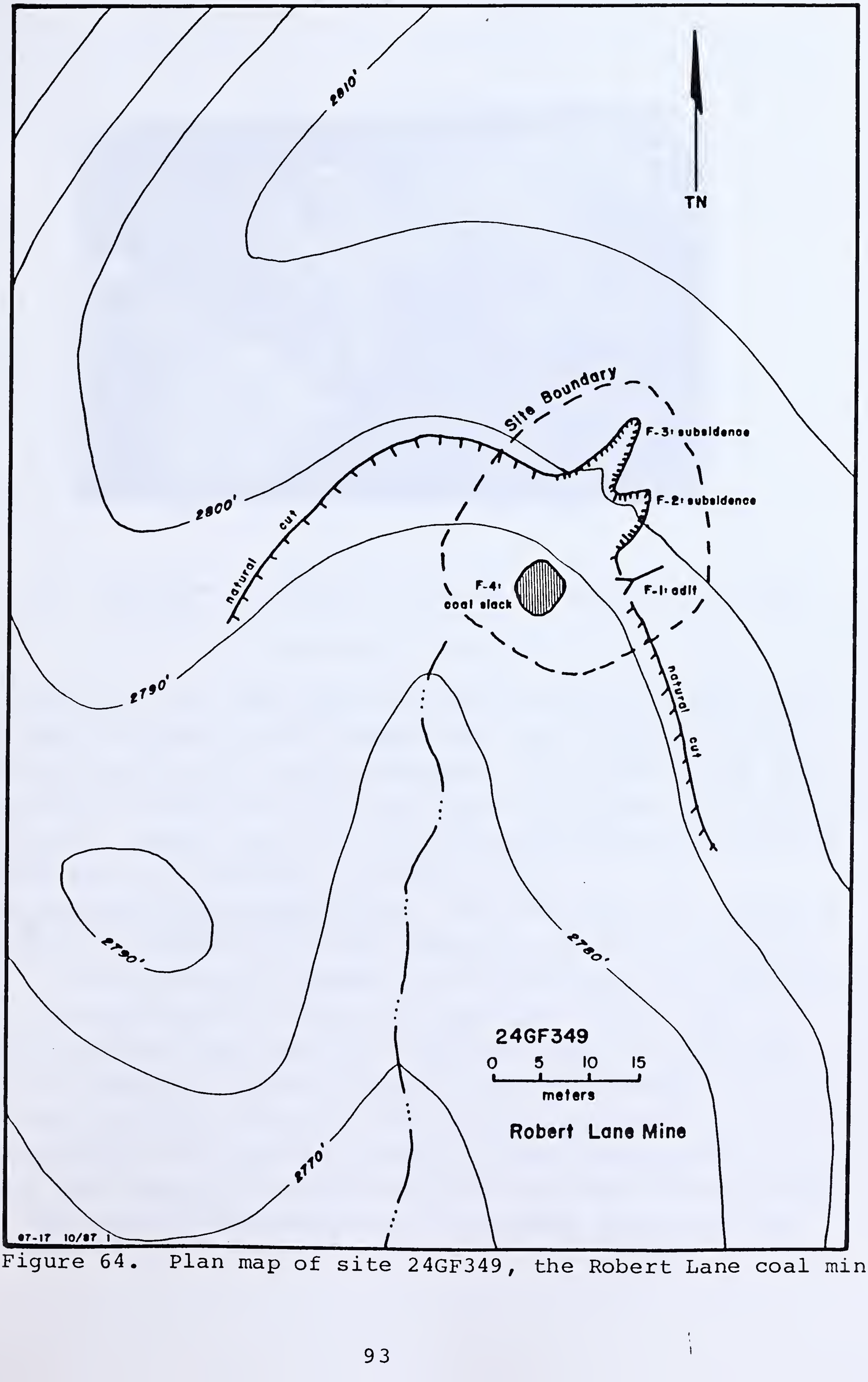


Figure 64. Plan map of site 24GF349, the Robert Lane coal mine.

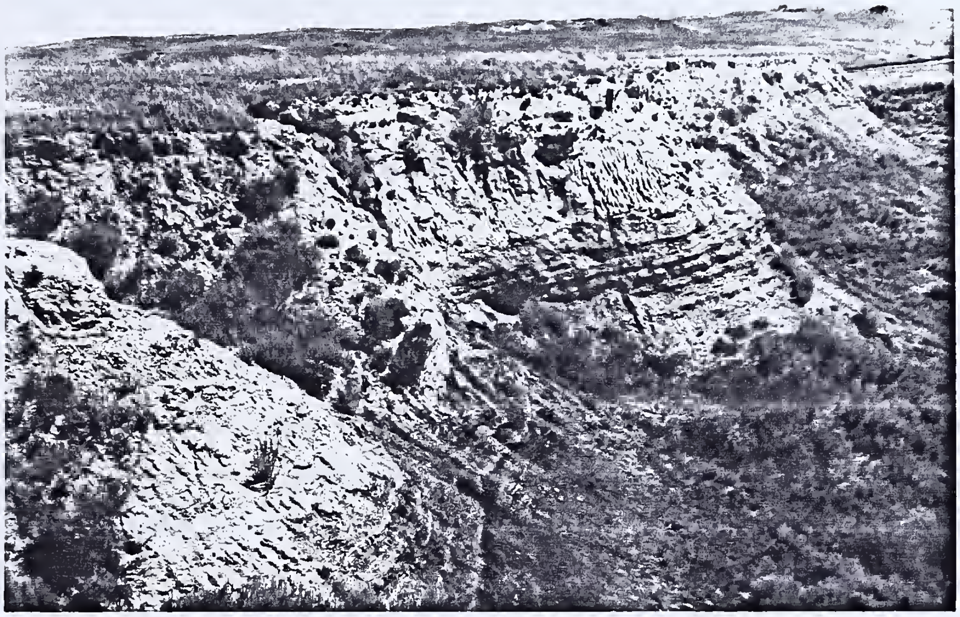


Figure 65. Overview of Feature 1, partially open adit at site 24GF349.

According to Mr. Ken Fogel of Jordan, Montana, Robert Lane was an early resident of the Jordan area, who was known to the community primarily as a wagon freighter. He carried goods from the railroad at Miles City to rural areas like Jordan and smaller communities. Robert Lane's son, Earl operated another mine north of Jordan that is discussed in Section 4.4.4.

Evaluation and Recommendation. This site does not appear to be eligible for nomination to the National Register of Historic Places. The site does not appear to be associated with people or events of significance to the local community. Also, the remaining features lack physical integrity, thus limiting its ability to represent the more general, and historically significant, activity of small scale local coal mining.

Reclamation will probably consist of sealing the adit entrance, and removal or neutralization of the coal slack in the area. All areas of disturbance will be seeded, fertilized and

mulched. No additional cultural resource sites were located during the survey of the project area, and HRA recommends that no additional cultural resource work be conducted prior to reclamation.

4.4.4 Earl Lane Project Area: Site 24GF350, Earl Lane Coal Mine

The Earl Lane reclamation area is located about five miles northeast of the Robert Lane mine (24GF349). The project area lies directly adjacent to the main county road between Jordan and Haxby, just below the north side of the ridge that forms the low divide between Frazier Creek and its intermittent tributary, Little Wolf Creek (Figures 66 and 67). The greater project area consists of a series of heavily dissected ridges that run northwest to southeast. The major drainages have wide, flat bottoms with meandering stream channels. Some cultivated land is found in the drainage bottoms, but the area is used primarily for livestock grazing. The only site recorded during the survey of the Earl Lane reclamation area is the coal mine, site 24GF350.

Mining-related features at this site are fairly typical of those found at the other mines included in this report (Figure 68). Observed features include an adit which represents the only entry to the mine (Feature 1, Figure 69), and several areas of subsidence (Features 2 and 3, Figure 70; also see Figure 67).

A map drawn by a mine inspector in 1945 shows that the main entry to the mine had a "covered" open cut. Several large timbers found in the area of subsidence over the main entry may be the supports for the timber covering. Feature 4 represents the remains of a dugout structure excavated in the side of the hill adjacent to the adit. Three of the walls are formed by the hillside, and one wall was made of logs (Figure 71). Also located at the site is an area that appears to have been stripped (Feature 5), and a shallow cut excavated into the side hill next to the dugout (Feature 6).

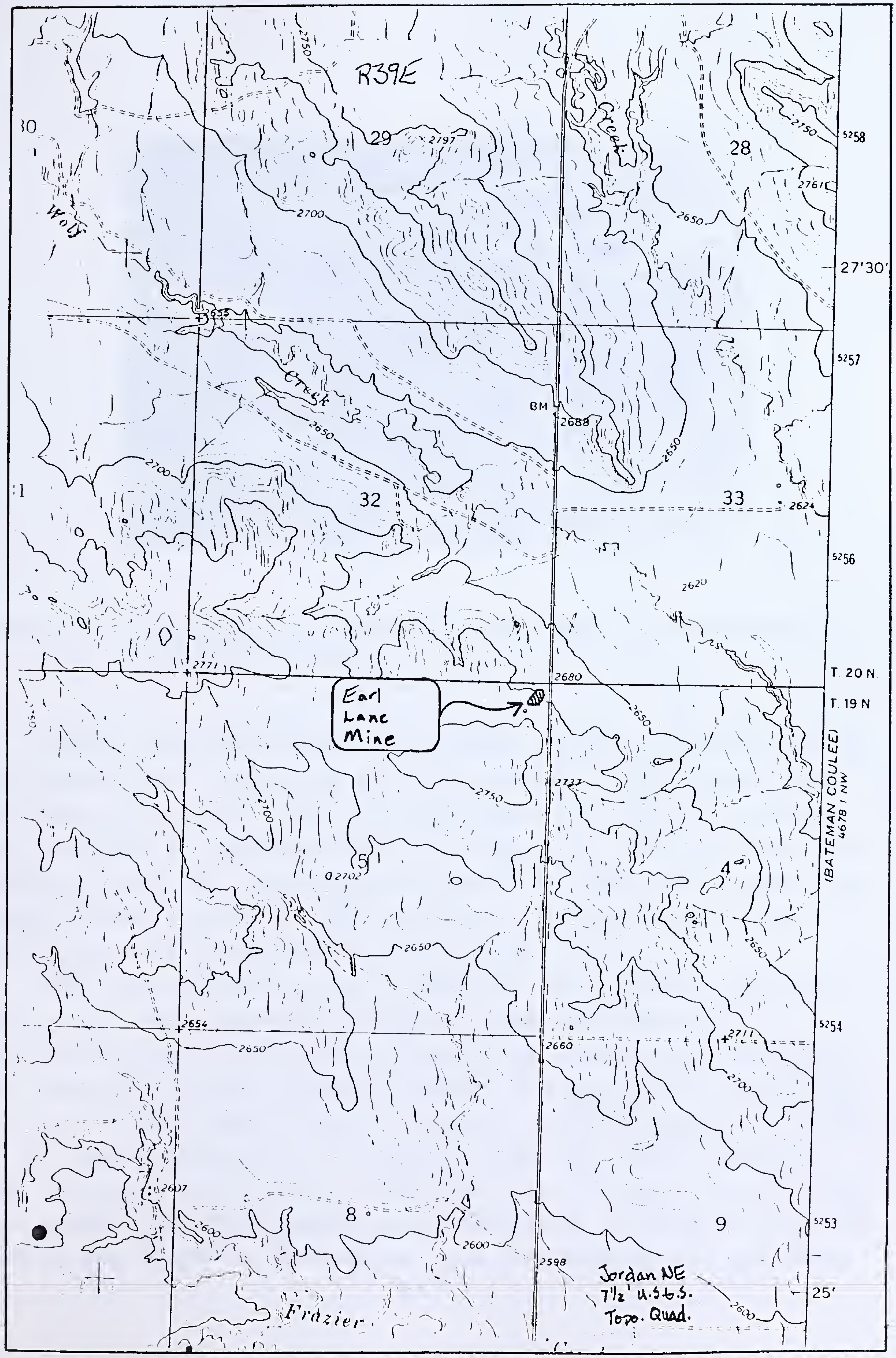


Figure 66. Copy of USGS Jordan NE topographic map showing location of Earl Lane project area.

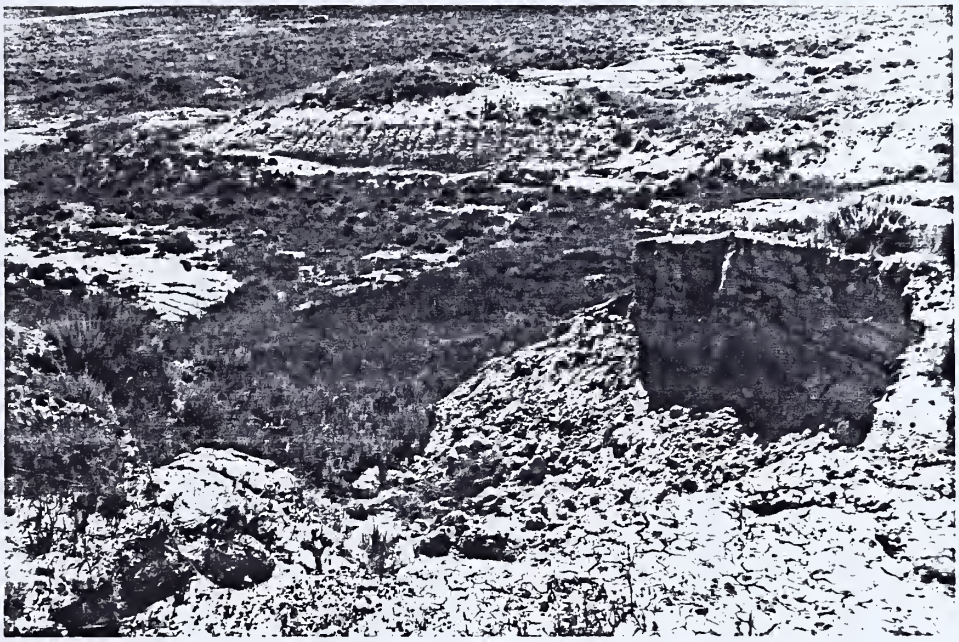


Figure 67. Overview site 24GF350 looking south of the Feature 3 subsidence area.

Norman Olson has leased the surface rights to this parcel of land since 1931. Olson was the first person to mine coal from this area, in 1937 or 1938. He was looking for coal to use for his own domestic needs and that of a neighbor, both of whom live close to the mine. According to Olson, the coal seam cropped out on the ground surface at this locality, and he stripped the overburden away to access the coal (Olson 1987).

Earl Lane filed for coal a lease at this location one year after Olson first exposed the seam. Lane developed the underground mine at the site by tunneling a main entry into the coal seam that slopes downward towards the southwest. According to Olson, a good seam of coal -- about 7.5 feet thick -- is found at the lower elevation of the mine. With the help of another man, Lane excavated rooms off both the east and west side of the main entry. He used a motor-driven generator to power a drill to prepare the holes for the powder, and then blasted out the coal.

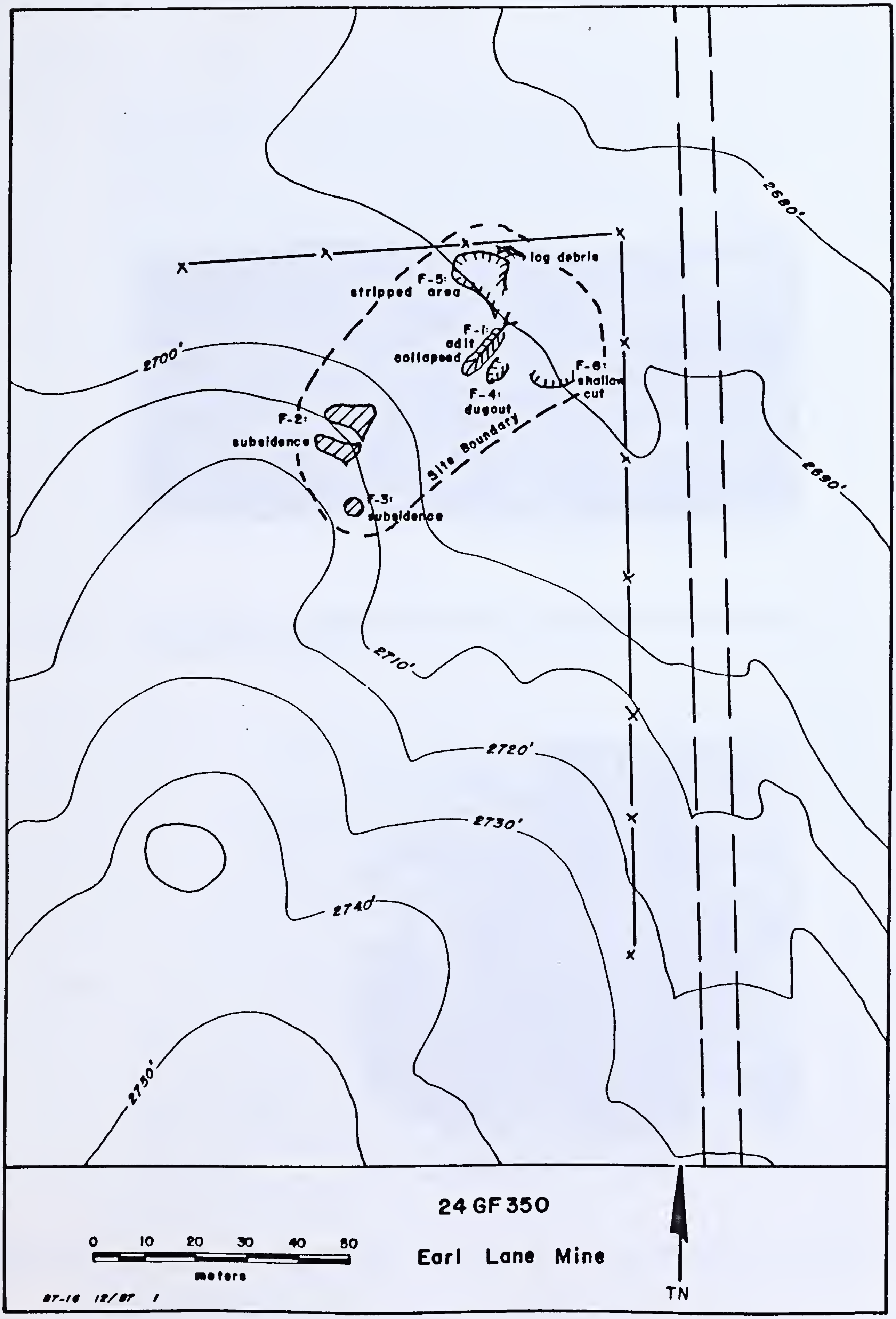


Figure 68. Plan map of site 24GF350, Earl Lane coal mine.

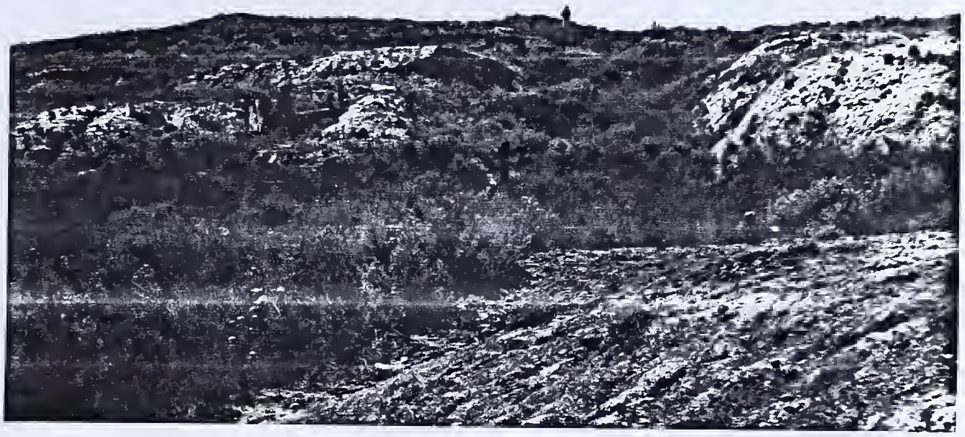


Figure 69. Looking southwest at site 24GF350 to Feature 1, collapsed entry.

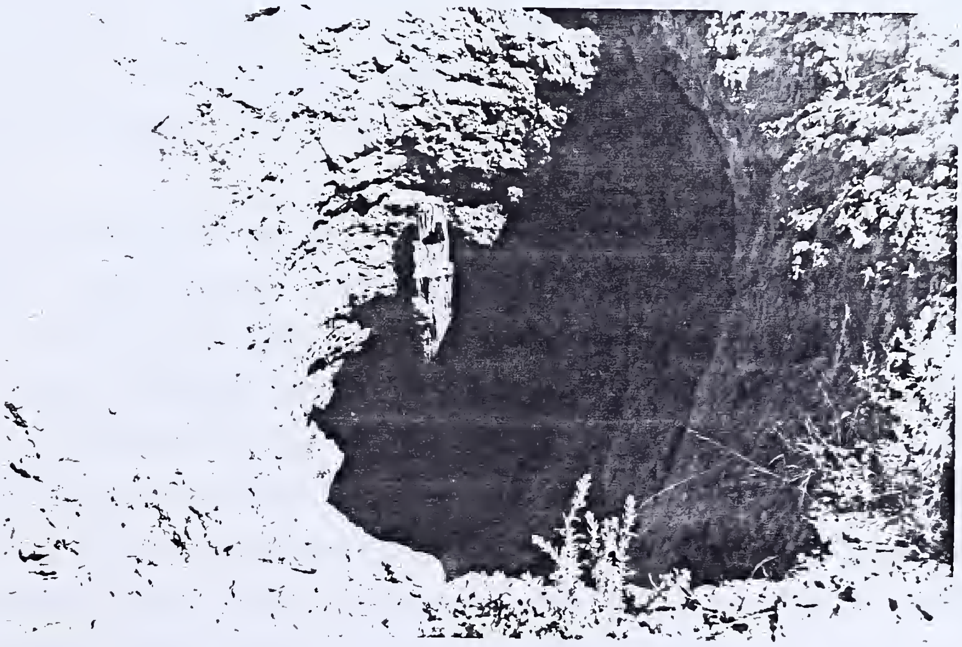


Figure 70. Feature 3, a deep subsidence hole at site 24GF350.

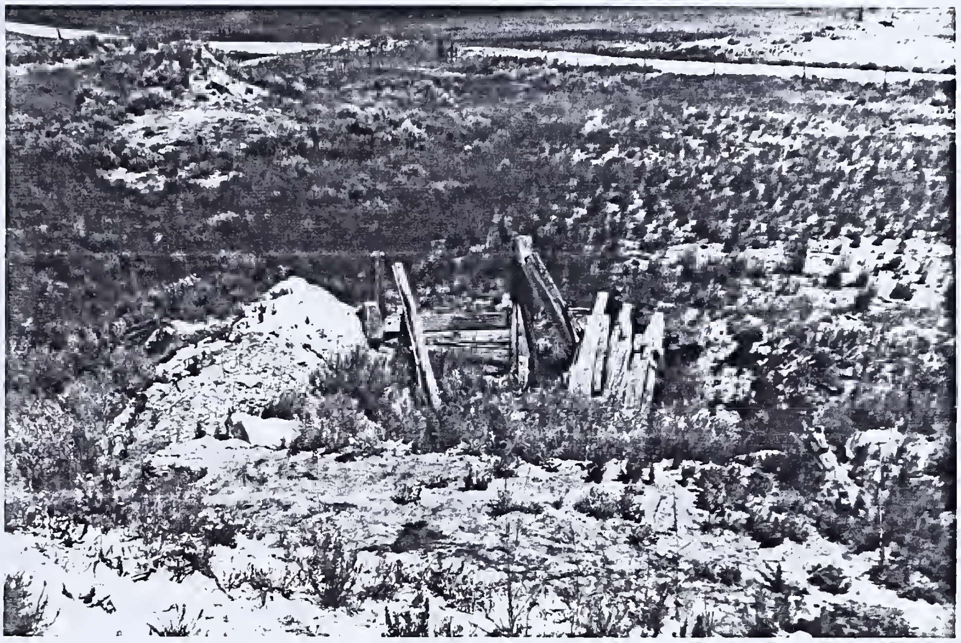


Figure 71. Feature 4, a dugoutstructure at site 24GF350.

Coal was loaded into a car that ran along a tramway in the main entry. Lane used a horse to pull the loaded car up the incline to the exterior of the mine, where it was emptied into a loading area, and then simply let the empty car roll back into the mine (Olson 1987).

Lane operated the mine only in winter, when he was not employed with ranch work. The dugout log structure represents the remains of Lane's camp, which he used for a shelter while working the mine (Fogel 1987). Lane sold the coal to local residents, who would bring their empty trucks or wagons to the mine and purchase the coal for about a $1.00 to $1.50 per ton. Information from the BLM master list of major abandoned coal mines indicates that Lane abandoned the mine in 1947, after extracting about 1800 tons of coal (Olson 1987).

Evaluation and Recommendation. Site 24GF350 does not appear to qualify for nomination to the National Register of Historic Places. The lack of physical integrity of the features at this site limit its ability to represent the historic events with which it is associated.

Reclamation at this site will probably include excavation and back-filling of the mine workings under the areas of subsidence, and perhaps cleanup of the debris at the site including the remains of the dug-out log structure. Areas of disturbance that result from reclamation, with be seeded, fertilized and mulched. Besides the mine, no further cultural resource sites are located adjacent to this reclamation area, and we recommend that no further cultural resource work be conducted at this site prior to reclamation.

4.4.5 The Haxby Reclamation Site

The Haxby project area is located north of Jordan, not far south of Fort Peck Lake, in the heart of what is generally referred to as the badlands (Figure 72). The specific site locality is on top of a northwest/southeast-running ridge that forms the divide between Ash Creek and Box Creek, both of which are southeast-flowing, intermittent tributaries of Big Dry Creek. The north side of the ridge is extremely steep, and drops abruptly onto a level, terrace-like area above intermittent tributaries of Box Creek. Cultural resource sites located within or adjacent to this project area include the remains of the strip mine (site 24GF350) and a previously recorded prehistoric site (site 24GF157).

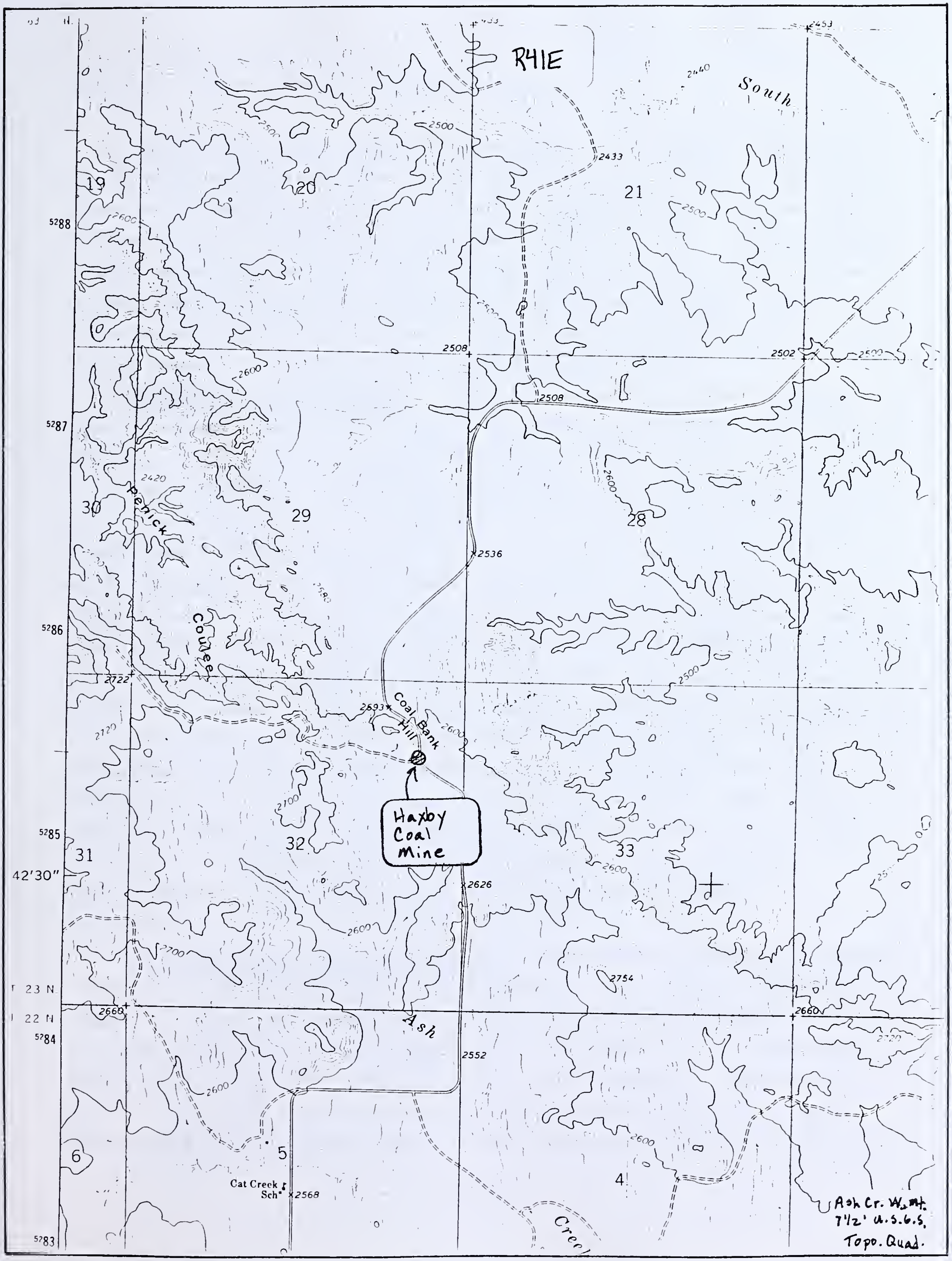


Figure 72. Copy of USGS Ash Creek West topographic map showing location of the Haxby project area.

4.4.5.1 Site 24GF351, Haxby Coal Mine

Unlike the other mines discussed in this report, which are all underground mines, the Haxby site is a strip mine. The only feature currently present is a large stripped area located west of the current Haxby road (Figures 73, 74, and 75). The original county road skirted the west edge of the strip pit, but the new county road bisects this feature along its east edge. Local informants indicate that there were no other improvements at this site (Fogel 1987; Schillreff 1987; Edwards 1987).

Historical Development. The BLM lease files for federal coal contain a record of a lease for this site (Great Falls No. 075695), issued to the Haxby Coal Association. About 200 tons of coal are reported to have been mined from the area legally, and an "unknown quantity" in trespass. All of the local residents interviewed concerning mines in the Jordan area were familiar with the Haxby site (Schillreff 1987; Olson 1987; Fogel 1987; Edwards 1987). Without exception, these people indicated that "the strip mine at the Coal Bank Hill" was used communally, primarily by the people living in the Haxby area north of the site. Men from several families would go together to mine the coal, and share the special skills and equipment that each possessed (Schilreff 1987). According to Lawrence ("Hoolie") Edwards (1987), the coal from this location was not very good, which may account for the relatively low production figures for this mine. People may have been unwilling to pay for poor quality coal, which they could mine with little effort themselves.

Evaluation and Recommendation. Site 24GF351 does not appear to qualify for nomination to the National Register of Historic Places. It is not associated with individuals or events of significance to the local community. In addition, the physical integrity of the only feature present at the site -- the strip pit -- has been compromised by construction of the new county road through its eastern edge, thus destroying the site's ability

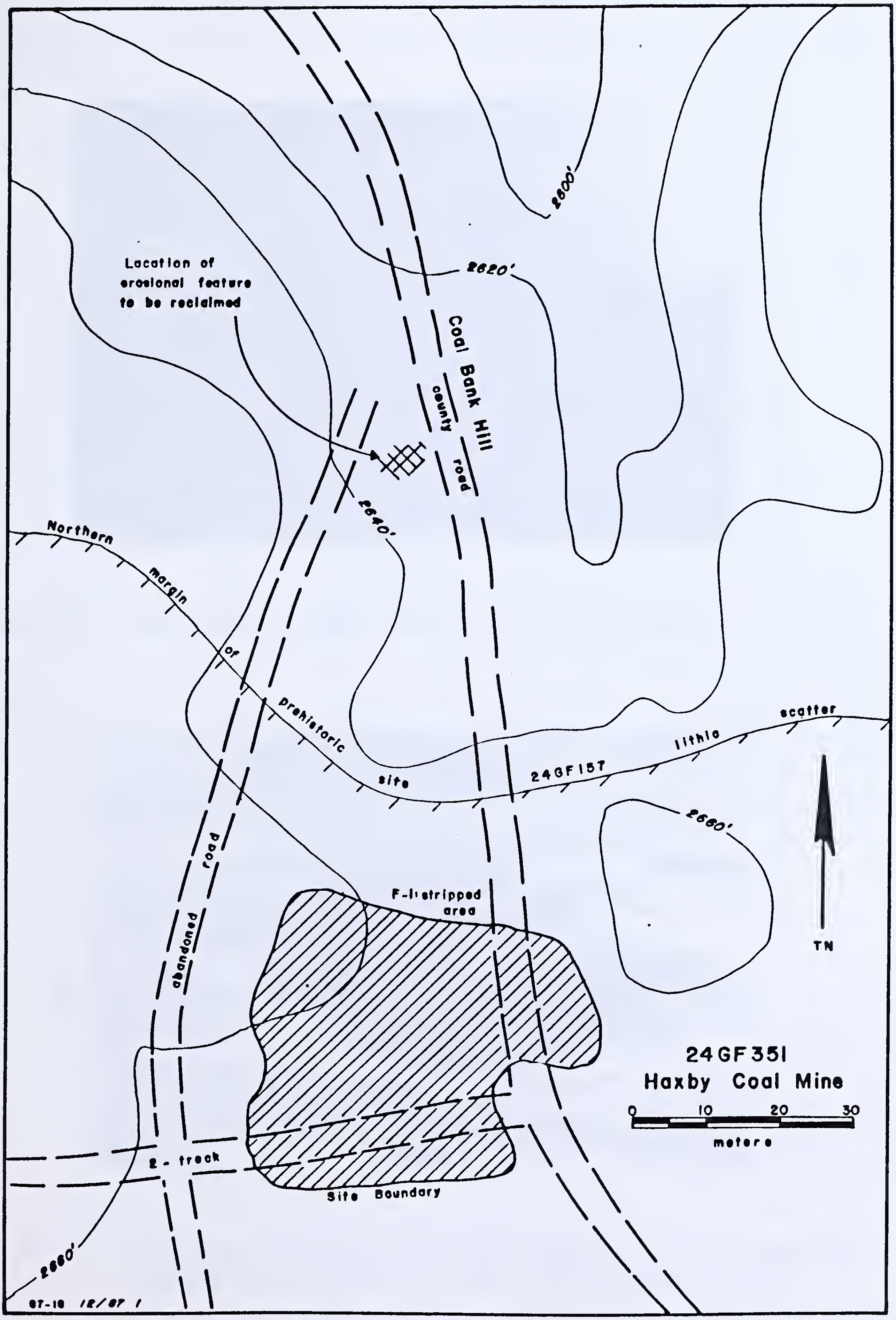


Figure 73. Plan map of site 24GF351, the Haxby strip mine.

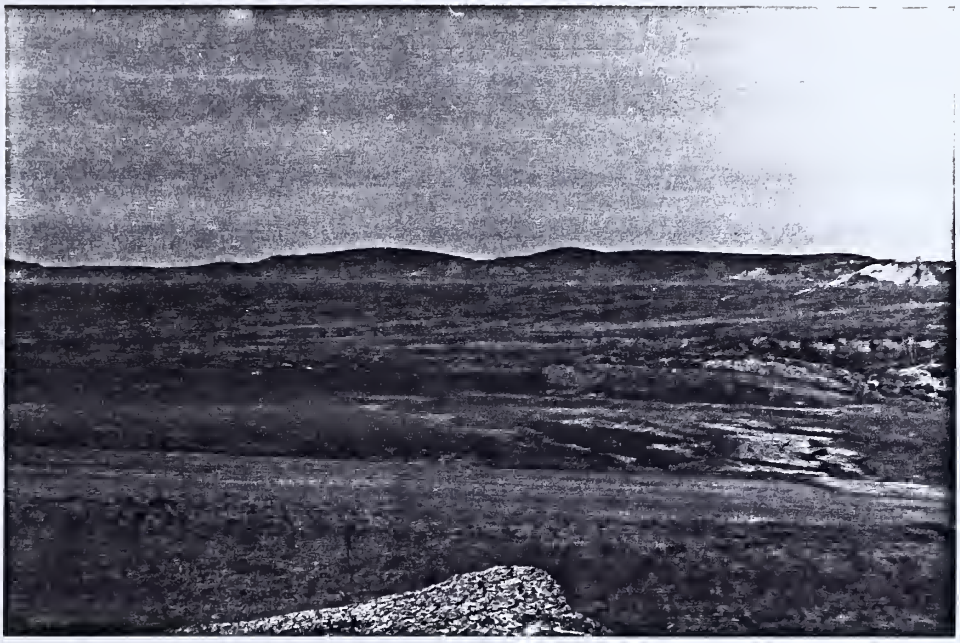


Figure 74. Overview of site 24GF351, looking west.

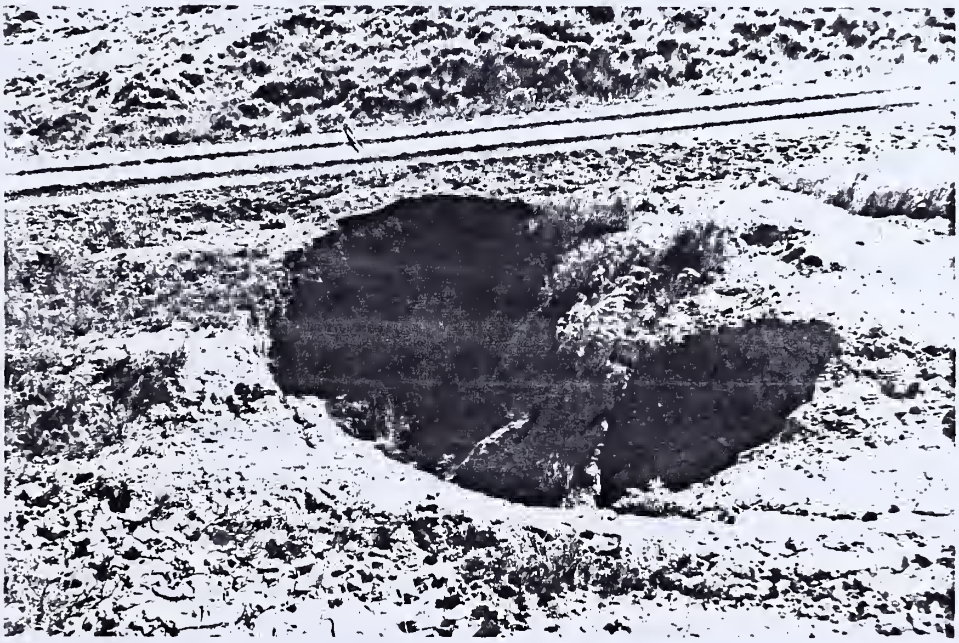


Figure 75. Erosional feature at site 24GF351 to be corrected during reclamation at the Haxby project area.

to represent the historically significant activity of small scale strip mining.

4.4.5.2 Prehistoric Site 24GF157

In addition to the coal mine in this area, a previously recorded prehistoric lithic scatter is located along the ridge that contains the coal mine. The original site recorders did not provide a definite site boundary, but indicated that cultural material is found along a half mile stretch of the ridge top (Hoffman 1987). During the pedestrian inventory of the current project area, the HRA field crew located widely scattered pieces of lithic debitage and fire-broken rock along the ridge top, within 100 meters on either side of the stripped area on both sides of the current county road.

Evaluation and Recommendation. The major focus of reclamation at the Haxby project area will be correction of a drainage problem on the hill slope below the ridge, caused by construction of the new county road. Apparently, nothing will be done with the strip pit or the area adjacent to it, and thus the prehistoric site is not in danger of being impacted by reclamation activity. Transportation of heavy equipment through the area should be limited to existing roadways, and care should be taken by field personnel to avoid disturbing the areas adjacent to the strip pit by activities such as turning or parking vehicles.

If these conditions can be met, HRA recommends that no further cultural resource work be conducted at the Haxby project area prior to reclamation. However, if the area adjacent to the strip pit cannot be avoided during reclamation, then additional survey to determine the horizontal extent of the site, and subsurface testing to determine the presence or absence of significant buried deposits will have to be conducted to determine its National Register eligibility status.

4.5. Golden Valley County Reclamation Area: Cameron Creek Project Area

The Cameron Creek project area is located towards the eastern edge of Golden Valley County on a wide, gently sloping ridge above the east side of Cameron Creek, an intermittent tributary of the Musselshell River. Cameron Creek drains the foothills of the eastern edge of the Big Snowy Mountains, and the surrounding area can be described in general as open, gently rolling grassland, broken at intervals by uplifting of the underlying sandstones that are part of the Judith River Formation. The Cameron Creek project area includes four mining areas that lie along one of these ridges, where coal lenses outcrop at or near the surface (Figure 76).

The Cameron Creek project area lies within what was known historically as the Vipond Coal Field. The earliest reference to this field comes from a 1913 report written by Mineral Examiner Leroy A. Palmer and submitted to the Commissioner of the General Land Office in Washington, D.C. This report documents an examination of lands in T10N, R21E, the site of the current project area.

Apparently, Palmer's 1913 survey of the area was instigated, at least in part, John V. Vipond's application requesting classification of several parcels of land as coal lands (Minutes of Coal Board, October 13, 1913, Book 4, Vol. 22, Montana Coal Minutes 1913-1914).

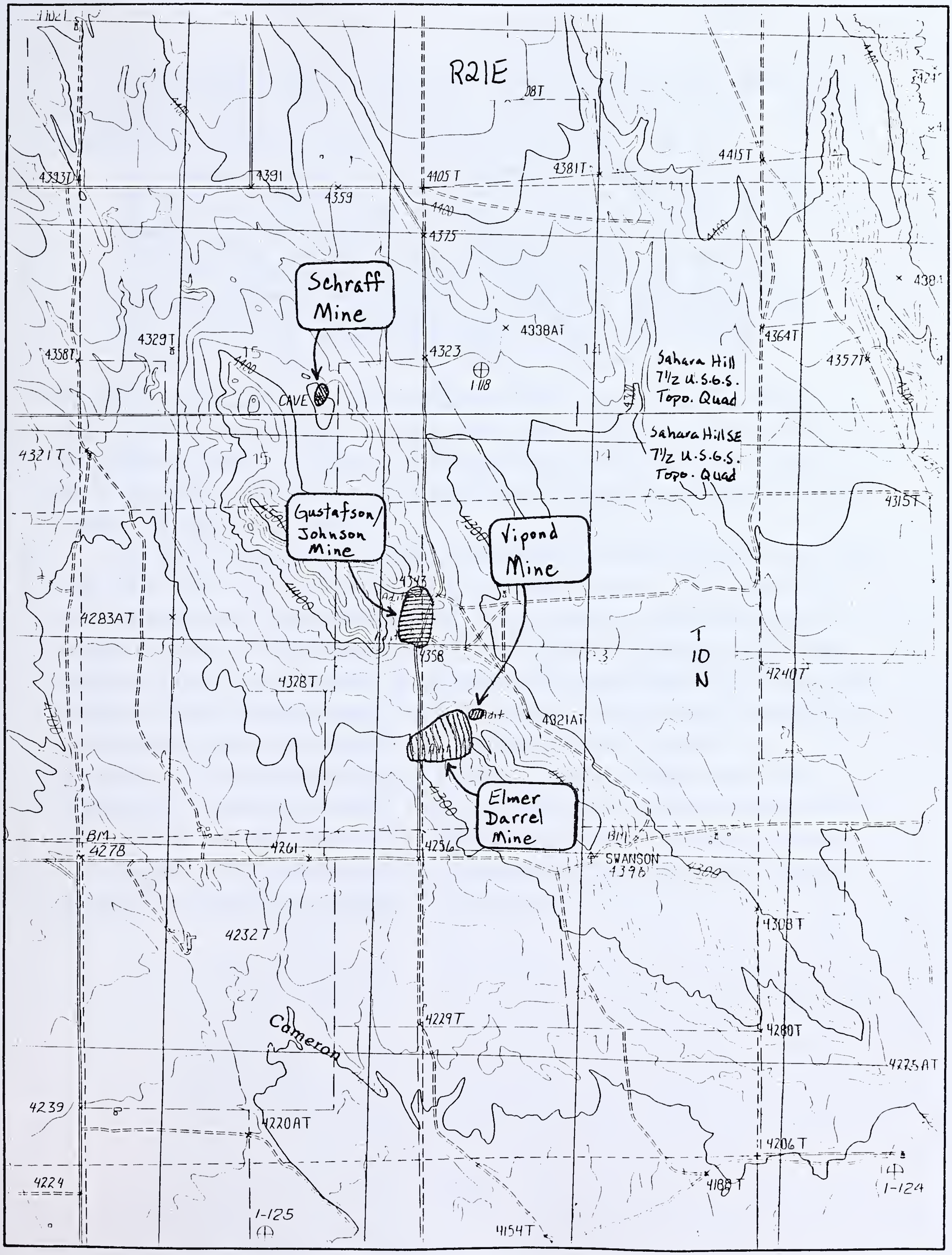


Figure 76. Copy of USGS Sahara Hill and Sahara Hill SE topographic maps showing the four mines in the Cameron Creek project area.

John Vipond came to the area north of Lavina in about 1910, made application for a homestead, and developed the coal in the immediate vicinity of his homestead property. By 1913:

> ... Vipond states that he has made improvements in the nature of opening up a coal mine in the NW1/4 of SW1/4 of Sec. 23, and he has a shaft 5 feet by 9 feet, and 45 feet deep, on the section line one fourth of a mile south of the quarter corner between Secs. 22 and 23; ... that a certain 125-foot tunnel mentioned in his coal declaratory statement ... has been abandoned; that the coal is of good quality and that he has expended over $3,000 in development work in the NW1/4 of SW1/4 of Sec.23 (Minutes of Coal Board, October 13, 1913).

By the time Palmer made his field survey, Vipond had already spent considerable time tracing the coal outcrop in the vicinity of Cameron Creek. Vipond provided Palmer with the locations of coal outcrops, which Palmer then used to determine the horizontal extent of the coal field.

As the result of his field inventory, Palmer determined that the coal found in the vicinity of Cameron Creek represented a continuation of the Roundup coal field, east of the current project area. (A 1958 geological map of Montana shows that the Roundup mines access coal from the Fort Union Formation, and the Cameron Creek mines access coal from the Judith River Formation, indicating that the Vipond coal field probably is not an extension of the Roundup coal field.) Palmer describes the Vipond coal field as being "about 30 miles long with a width of about 18 miles and lies in a syncline the axis of which strikes in a general northwesterly and southeasterly direction" (Palmer to GLO Commissioner, August 13, 1913:2).

Palmer indicates that he visited two of the three small mines operating in the district in 1913:

> ... three small mines have been opened within a short distance of each other, one of them having been abandoned. These mines are owned and operated by John W. Vipond and Hjalmar Gustafson. The Vipond mine ... is the largest of the three. All are worked in the most primitive manner by shooting off the solid and hoisting by means of a windlass in wooden carts running on wooden rails. Acetylene lights are used as there are no occluded gases and the operation is not on such a scale as to keep the dust stirred up to the danger point.
>
> Both of these mines have been worked in a small way and the coal sold to the nearby ranchers. Mr vipond made his entry in about March of 1912, and sold 1800 tons during the first year. He told me that he believed the outlook was sufficiently encouraging o justify him in improving his haulage way and installing an engine, which he expects to do before next winter. Gustafson told me that he sold 300 tons during the first six months of 1913 (Palmer to GLO Commissioner, August 13, 1913:5).

Based upon a chemical analysis of the coal taken from the Vipond mine, Palmer classified it as grade "C" coal, which is a hard lignite or sub-bituminous variety. Palmer recommended that the entire area identified as the Vipond Coal Field be withdrawn (coal reserved to the U.S.) pending classification by the U.S. Geological Survey. However, Palmer's recommendations concerning the Vipond Field were not followed because his observations were not considered to be in sufficient detail. Further investigations of this field in 1914 failed to yield evidence of workable coal deposits except in Sections 22 and 23, T10N, R21E, those visited by Palmer in 1913.

Apparently, the Vipond Coal Field was never formally classified as coal land in its entirety. Only a few portions of Sections 22, 23, 10, and 1 were given the designation of coal lands. The government scheme for fixing a value on coal lands depended on the quality of the coal, the size of the tract containing the coal, and the distance of the coal bed from the

closest railroad shipping point. In Sections 22 and 23 of T10N, R21E, the Montana Coal Board assigned the minimum value of $10 per acre to classified coal lands, partly because the area is outside the 15-mile limit from the railroad at Lavina (plat dated May 15, 1918 for T10N, R21E, part of township/range reports housed at the BLM Office, Billings).

Besides the mines along Cameron Creek, several other coal mines operated within the Vipond Coal Field. These include the Dunlop and Bennett mines, both located south of the Cameron Creek mines. Descriptions of these mines found in a 1914 report by Mineral Inspector C.E. Lester indicate that the Bennett mine was probably the largest in the district. In this report, Lester states that, "Practically all of the supply of fuel for the town of Lavina comes from the latter [Bennett] mine....[where] a steam engine is used for hoisting the coal 150 feet up the 25 [degree] slope" (Lester 1914:5). The Dunlop mine appeared to have been abandoned in 1914.

The four proposed Cameron Creek project reclamation areas all are located within the area identified as part of the Vipond Coal Field. Two of these sites represent the remains of the Vipond Mine (24GV119) and the Gustafson mine (24GV120), two of the earliest mining ventures in the district. One of the two remaining sites (the Elmer Darrell mine, 24GV116) appears to represent a later working of a coal seam originally opened by Vipond, and the other site (the Schraff mine, 24GV121), represents a natural coal outcrop that was mined by the landowners for their own consumption. All of these mines are located in areas where both the surface and mineral rights went to the patentee. Therefore, there area no records of coal mining permits for any of these mines.

4.5.1 Site 24GV119, the John Vipond Mine

The remains of the John Vipond Mine occupy a small area on the east side of the large sandstone ridge, east of Cameron Creek (Figure 77). Site remains are limited to a collapsed adit and tunnel (Feature 1, Figure 78) and a coal slack pile (Feature 2, Figure 79). These remains are located in the NW1/4 SW1/4 of Section 23, T10N, R21E, the area in which John Vipond developed his first mine.

Historical Development. Apparently, John Vipond first came to the area north of Lavina in about 1910 (Palmer 1913:2). As stated above, Vipond first developed the coal on his homestead property in 1912, and sold coal to surrounding ranchers for domestic use. A document entitled, "Report of Reconnaissance between Musselshell River and Big Snowy Mountains in central Montana," dated December 12, 1914, indicates that Vipond's mine was still open in 1914, and provided coal to ranch families living as far as 10 miles away (Lester 1914). However, by 1921, Vipond's mine had been abandoned, and the only two mines operating in the Cameron Creek area were one by Gustafson and Johnson, and one by Elmer Darrell (Holley 1914:3). It appears that Vipond's tenure as a coal miner in the Cameron Creek area lasted for less than a decade. According to Wesley Johnson, whose brother Henry worked at the Vipond mine, a man was killed in the Vipond mine when the roof of the main entryway collapsed. This event may have caused Vipond to abandon the mine (Johnson 1987).

Evaluation and Recommendation. This site does not appear to be eligible for nomination to the National Register of Historic Places. Although the site appears to represent one of the earliest mines in the Vipond Coal FIeld, site remains lack physical integrity and therefore are limited in their ability to represent the historic events with which they area associated.

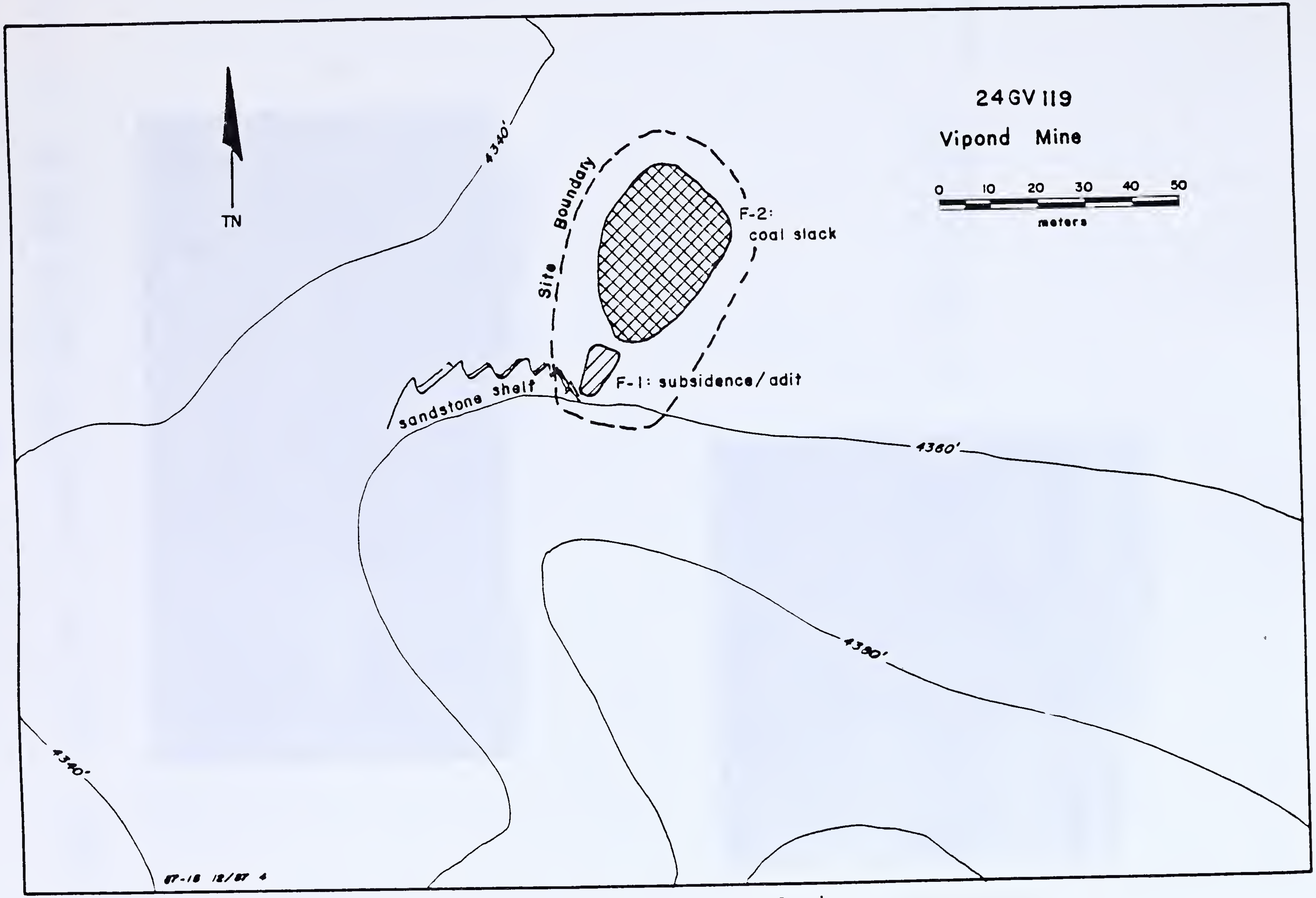


Figure 77. Plan map of site 24GV119, the John Vipond mine.

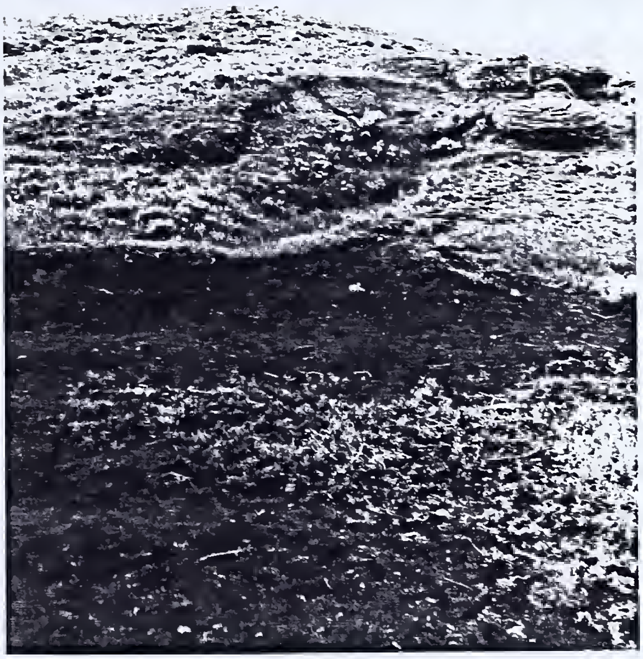


Figure 78. Feature 1, collapsed entry to mine site 24GV119.

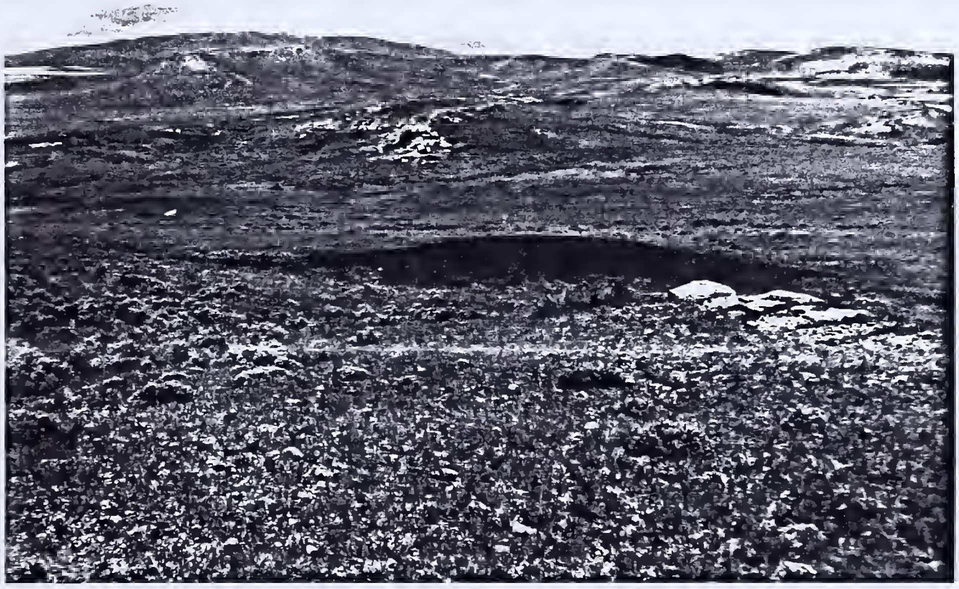


Figure 79. Looking northwest at Feature 2, coal slack in front of adit at site 24GV119.

Reclamation at this site will probably consist of excavation and in-filling the collapsed tunnel, perhaps with the material from the waste pile. Disturbed areas will be seeded, fertilized, and mulched. Since no other cultural resource sites are located in the vicinity of the proposed reclamation area, we recommend that no further cultural resource work be conducted prior to reclamation.

4.5.2 Site 24GV116, the Elmer Darrell Coal Mine

The cultural remains at this site cover an extensive area, and represent the remains of the mining endeavors of Elmer Darrell. However, the Darrell mine was developed on the patented homestead claim of John Vipond, and at least one of the features at this site seems to correspond to the description of Vipond's mining improvements.

Site remains are typical of those found at the other mines discussed in this report (Figure 80). Feature 1 is the adit, or opening to the incline tunnel (Figure 81). The slope of the tunnel is 20 degrees, dipping to the east, where it accesses a coal seam located 40 feet below the surface (Holley 1921). According to the project engineers, the incline currently is filed with water to a level of 35 feet below the ground surface, and the opening to the tunnel is partially blocked by trash.

In a 1921 report concerning operations at the Elmer Darrell Mine, Holley describes the "haulage" as being accomplished with the use of wooden ore cars and a gasoline powered hoist (Holley 1921:3). A small concrete "pad," located immediately west of the adit (Feature 2), may have functioned as a foundation for the gasoline hoist. This pad measures approximately 1m x 3m, and contains pieces of rebar, which once protruded at right angles to the pad but which have since been bent towards the ground (Figure 82).

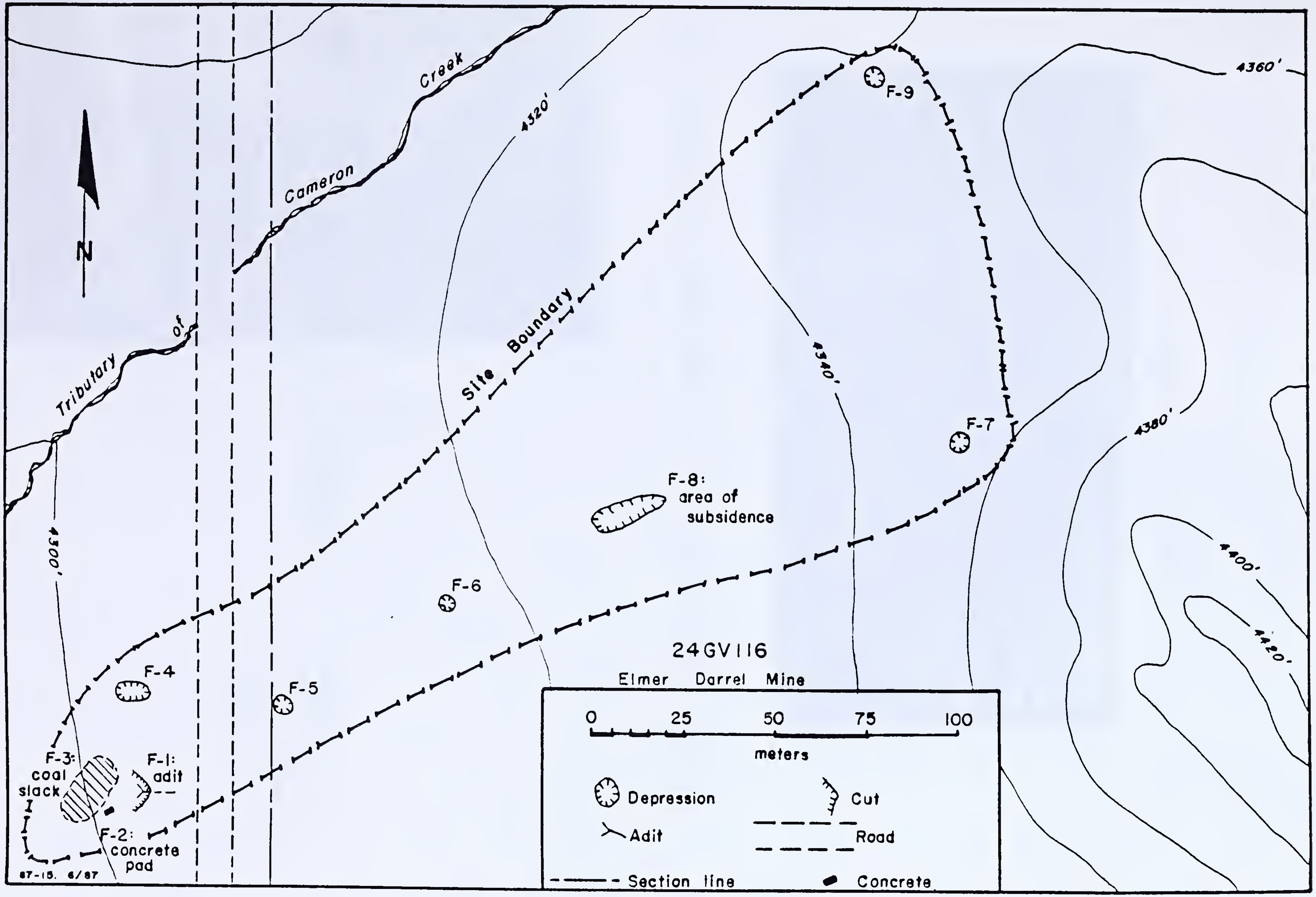


Figure 80. Plan map of site 24GV116, the Elmer Darrell coal mine.

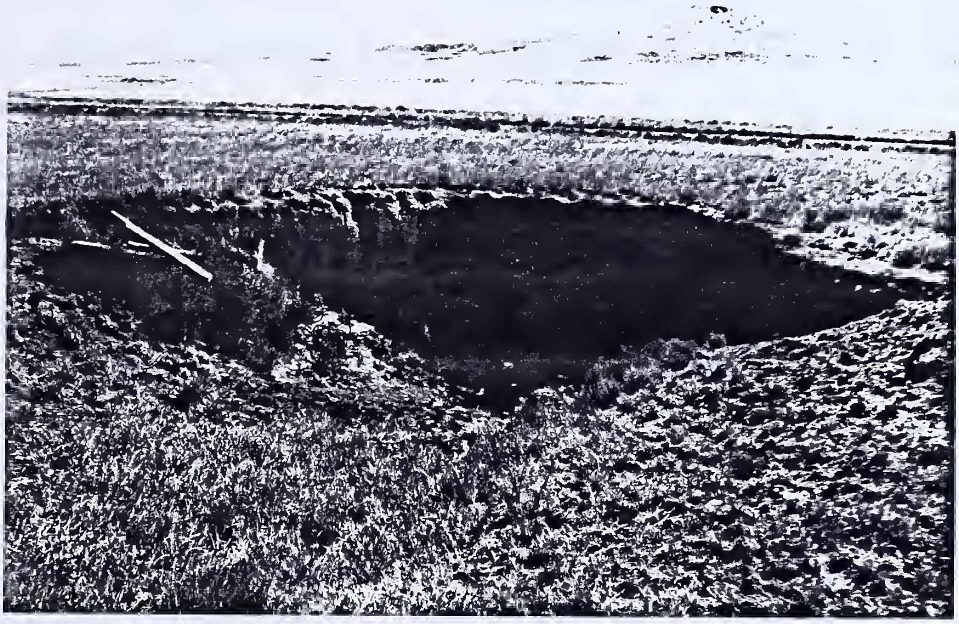


Figure 81. Feature 1, adit entry to incline at site 24GV116.

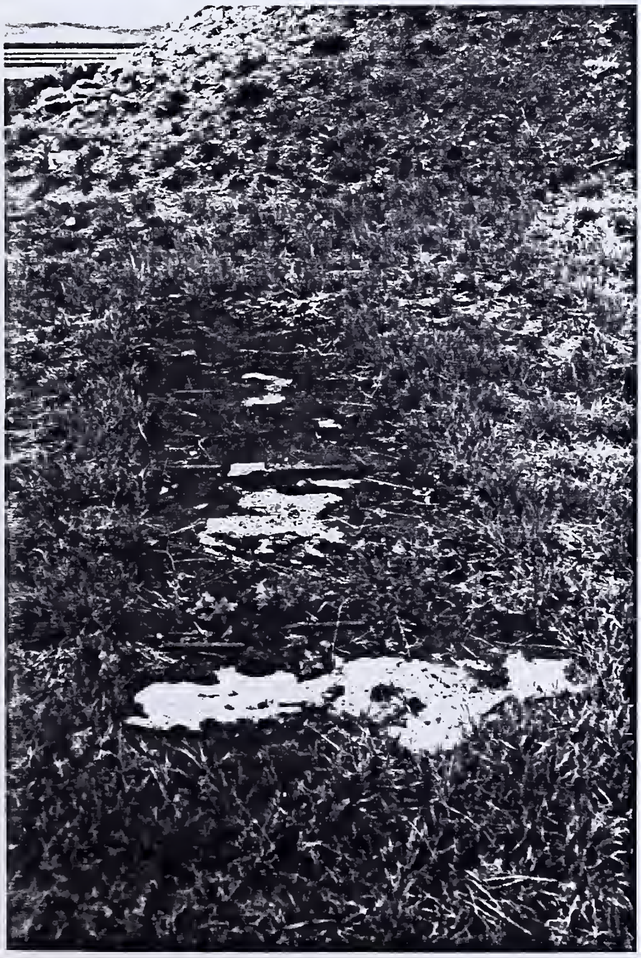


Figure 82. Feature 2, concrete pad with rebar at site 24GV116.

Feature 3 is a large coal slack pile, located adjacent to the edge of Feature 2. It appears that not all of the material in this pile is coal slack, but that the coal slack covers overburden removed during excavation of the incline, to access the coal seam.

Feature 4 is a large, rectangular depression - possibly a subsidence pit. It is located approximately 40 meters north of Features 1-3, on the west side of the Cameron Creek Road. This feature also, has been filled with trash, consisting mostly of wood debris (Figure 83).

Features 5, 6 and 7 all appear to be the remains of air shafts. All of these features are circular depressions with mounds of dirt around or adjacent to the periphery, indicating deliberate excavation rather than subsidence. Features 8 and 9 are subsidence areas (Figure 84).

Historical Development. As stated above, the mine remains at this location result primarily from the work of Elmer Darrell, but they are located on the homestead patent of John Vipond, one of the first people to develop the coal in the Cameron Creek area. Minutes of the Coal Board, dated October 13, 1913 (Montana Coal Minutes 1913-1914, Book 4, Vol. 22, available at the BLM State Office Billings Montana) indicate that Vipond's coal mine was located in the NW1/4 of the SW1/4 of Section 23, to the north of the current site area, but that he also had dug a shaft "5 feet by 9 feet, and 45 feet deep, on the section line one fourth of a mile south of the quarter corner between Secs. 22 and 23". This location roughly corresponds to the location of Feature 5, a subsidence hole at the current site.

The first documented reference to the Darrell mine comes from a 1922 report written by General Land Office (GLO) Mineral Examiner Robert Holley, and directed to the Commissioner of the GLO in Washington D.C. (Township/Range Reports, BLM, Billings Montana). Holly states that two mines were operating in the area in 1922 - one of these by Elmer F. Darrell. The mine is described as follows:

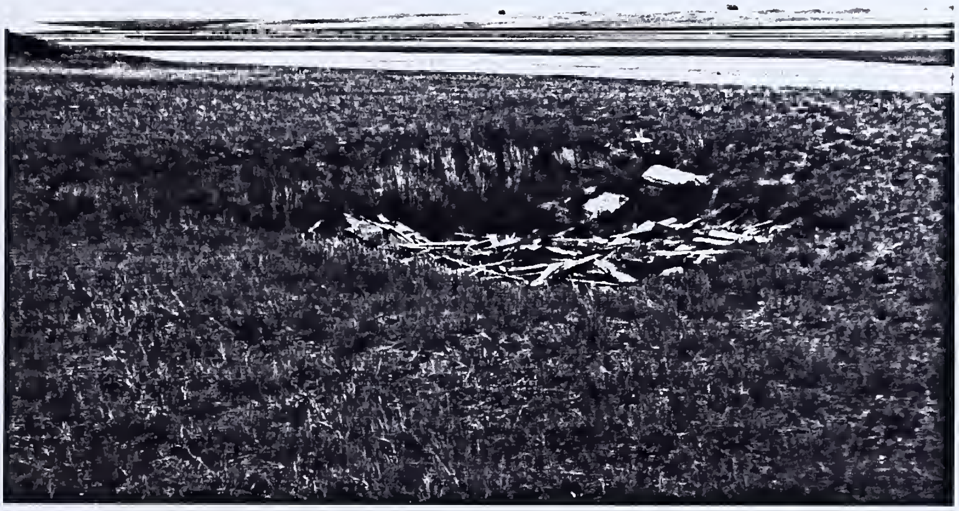


Figure 83. Feature 4, large rectangular depression at site 24GV116.

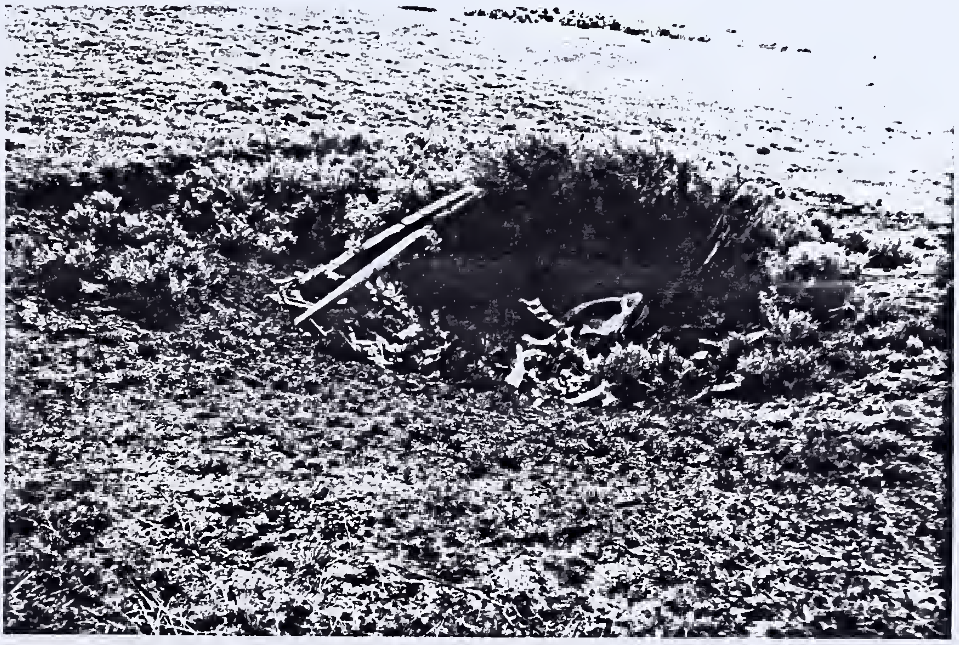


Figure 84. Feature 9, subsidence pit at site 24GV116.

> The Darrell slope is located on patented homestead entry 016861 [the John Vipond homestead] and is driven on a 20 [degree] incline to the east cutting into the coal bed at a depth of 40 feet below the surface. Haulage is maintained by the use of wooden cars and a gasoline hoist. The coal is stored in a wooden bin having a capacity of 60 tons (Holley 1921:3).

During his field work, Holley examined a section of coal from the Darrell mine and states in his report that "there can be little profit in mining this deposit as it requires extra care in separating the coal from the included bone and clay and the value of the marketable product is in the labor put into it" (Holley 1921:4).

Unfortunately, there is no indication in Holley's report as to the length of operation of Darrell's coal mine, and HRA researchers were unable to document the exact period of operation of this mine. From Holley's description of the coal, it is likely that Darrell worked his mine to supply coal to a local market. According to Wesley Johnson, the mines in the Cameron Creek area were abandoned because the small mining ventures exhausted the coal in the seam.

Evaluation and Recommendation. Site 24GV116 does not appear to be eligible for nomination to the National Register of Historic Places. The coal storage bin and the gasoline hoist have been removed, the entry to the incline has been partially filled with trash, and the underground workings have filled with water. The site does not appear to be associated with people or events of significance to the local community, and the lack of physical integrity limits its ability to represent the historically significant activity of small scale local coal mining.

Reclamation at this site will consist of removal of the waste pile at the site and in-filling of all subsidence areas and depressions. The portion of the incline that passes underneath the county road will be filled with concrete, and the cut will be back-filled with material from the waste pile. Areas disturbed

by reclamation will be seeded, fertilized and mulched. No additional cultural resource sites are located in the vicinity of this coal mine, and we recommend that no further cultural resource work be conducted prior to reclamation.

4.5.3 Site 24GV120, the Gustafson/Johnson Coal Mine

The Gustafson/Johnson mine is located north of sites 24GV119 and 24GV116. Mining related features cover a fairly extensive area, and the two adits indicated on the site map (Figure 85) may represent two different mines operated at different periods of time. The southernmost adit (Feature 1, Figure 86) and its associated features, probably represent the remains of the mine opened first by Hjalmar Gustofson, the original patentee. A large coal slack pile (Feature 2) is located in front of the adit. Several depressions or subsidence areas (Features 4, 5 and 6) are located east of the adit, most of which have been filled with trash (Figures 87 and 88). The remaining feature at the south end of the site (Feature 3) is a raised foundation made of stacked sandstone slabs with squared sill logs still in place (Figure 89). With the exception of Feature 3, all of the site remains in this lower portion of site 24GV120 are located on the east site of a north/south-oriented county road.

About 60 meters north of Features 1-6 is another subsidence area (Feature 7) that appears to mark another entry into the coal seam. Feature 8 (Figure 90) is a wooden tipple located in front of Feature 7, and a large slack pile (Feature 10) is located adjacent to the north side of the tipple. Feature 9, located adjacent to the county road, may be the remains of a scale (Figures 91 and 92). Scattered boards and other debris located adjacent to this northern complex of features indicates that additional features or structures probably were once located in this area.

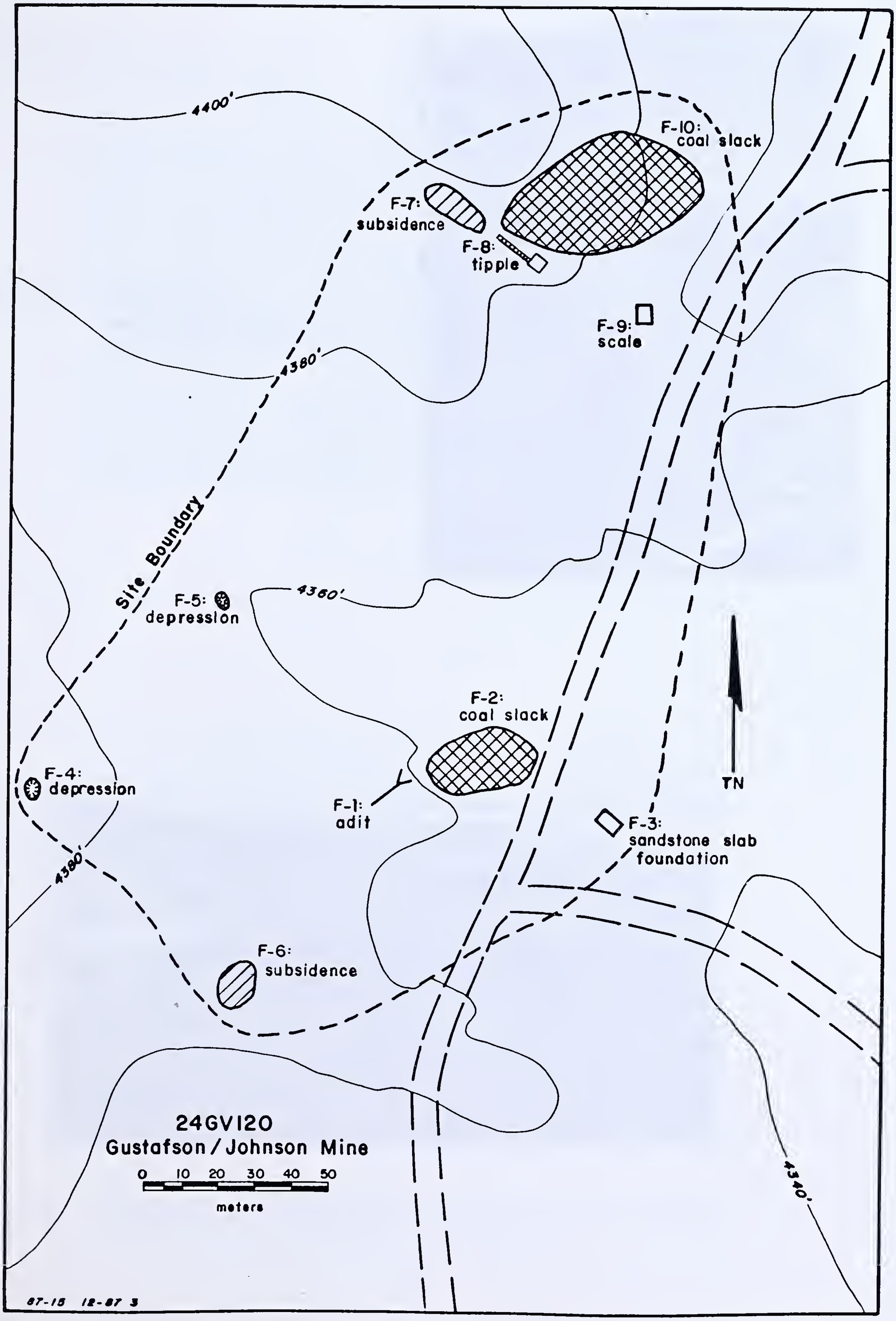


Figure 85. Plan map of site 24GV120, the Gustafson/Johnson mine.

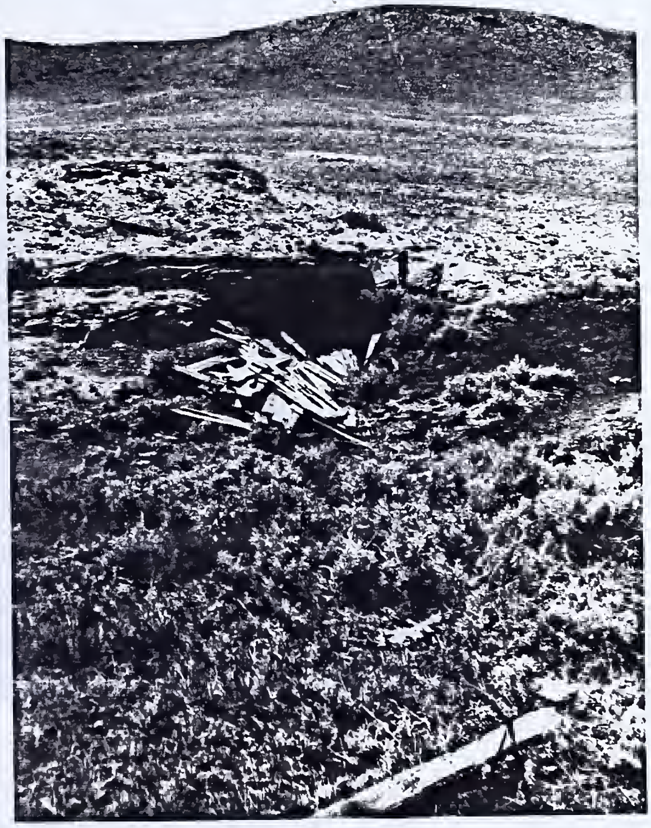


Figure 86. Feature 1, southernmost adit at site 24GV120.

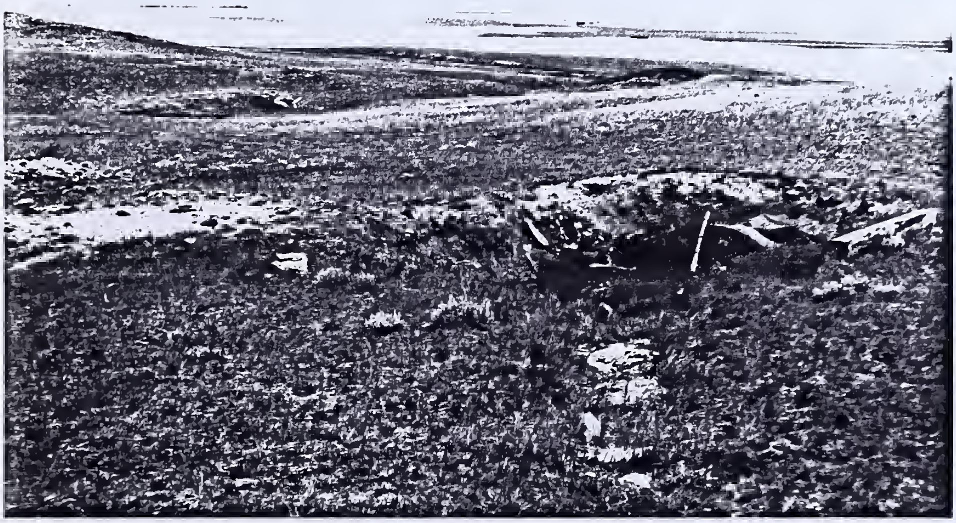


Figure 87. Feature 4, subsidence area at site 24GV120.

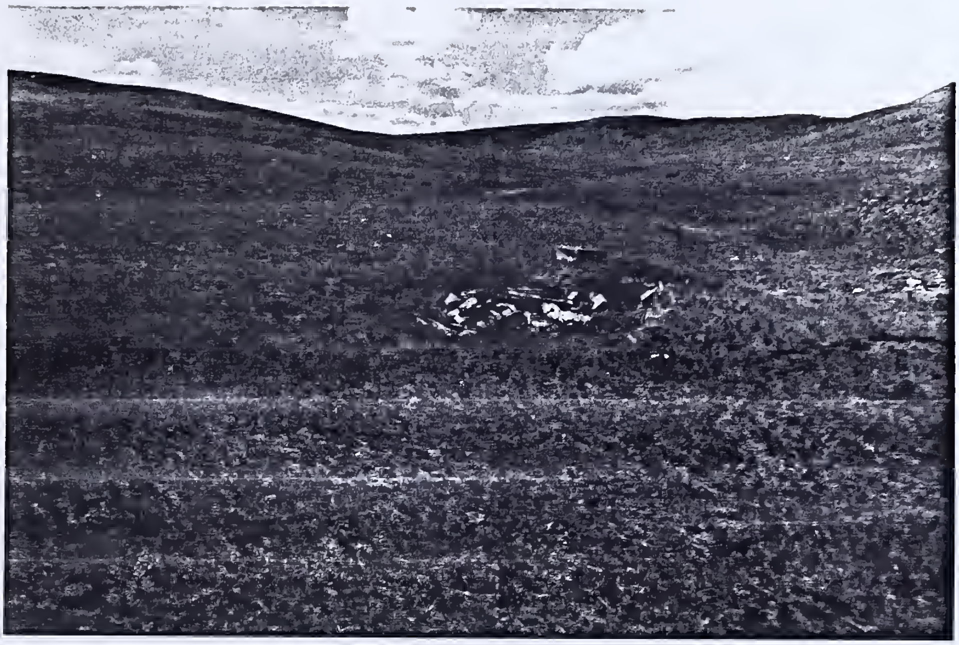


Figure 88. Feature 5, subsidence area at site 24GV120.

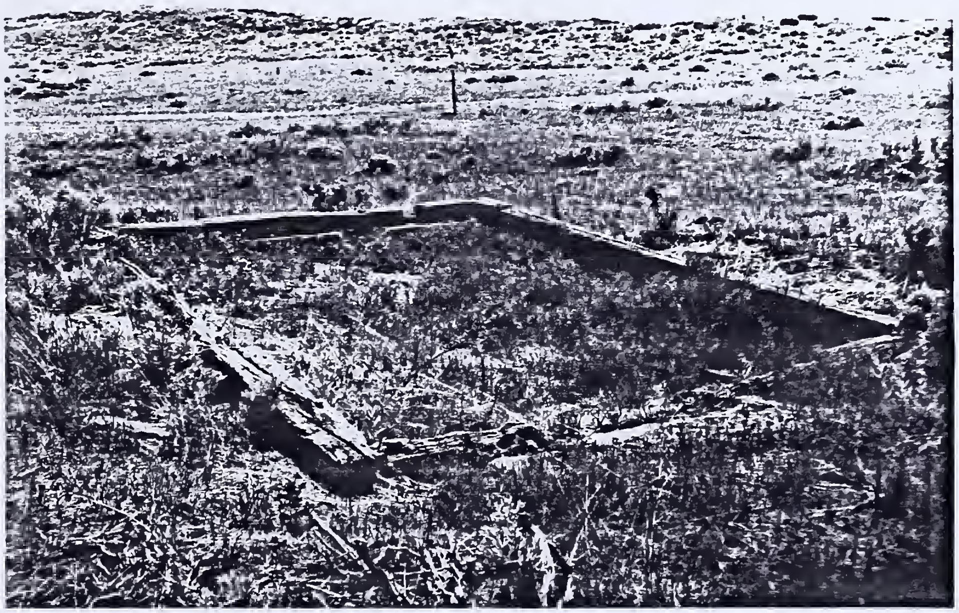


Figure 89. Feature 3, sandstone foundation at site 24GV120, with county road in photo background.

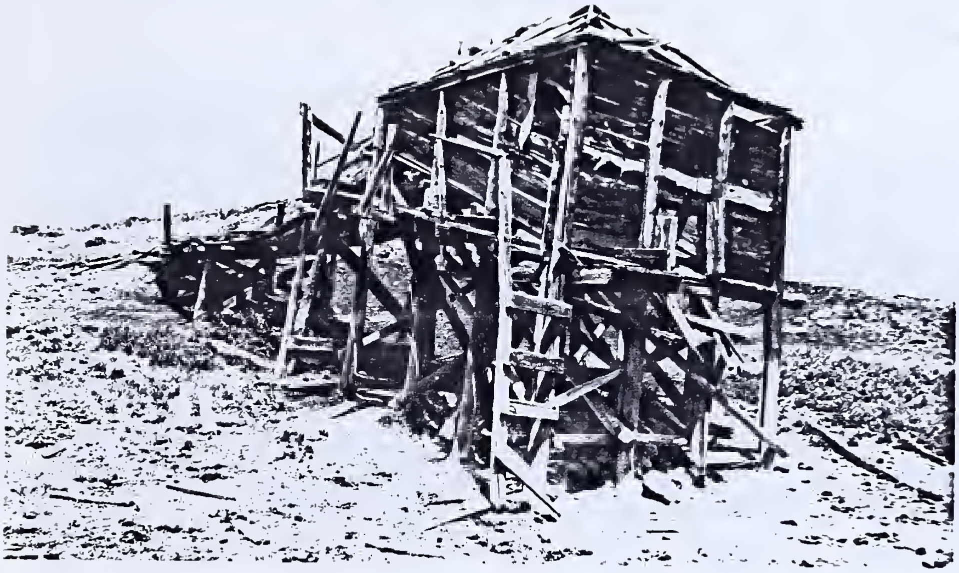


Figure 90. South and east sides of Feature 8 at site 24GV120.

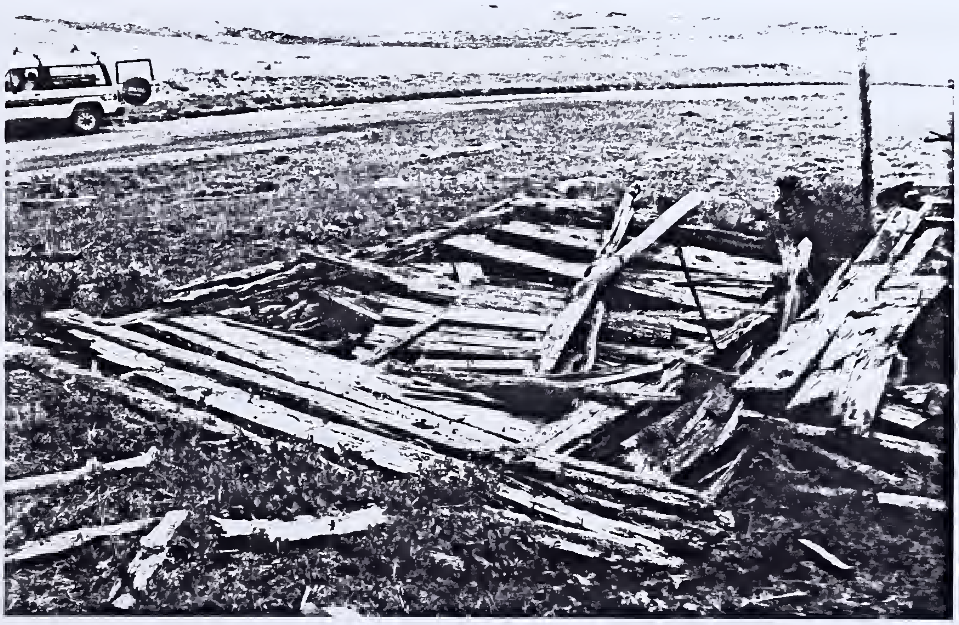


Figure 91. Feature 10, remains of scale at site 24GV120.

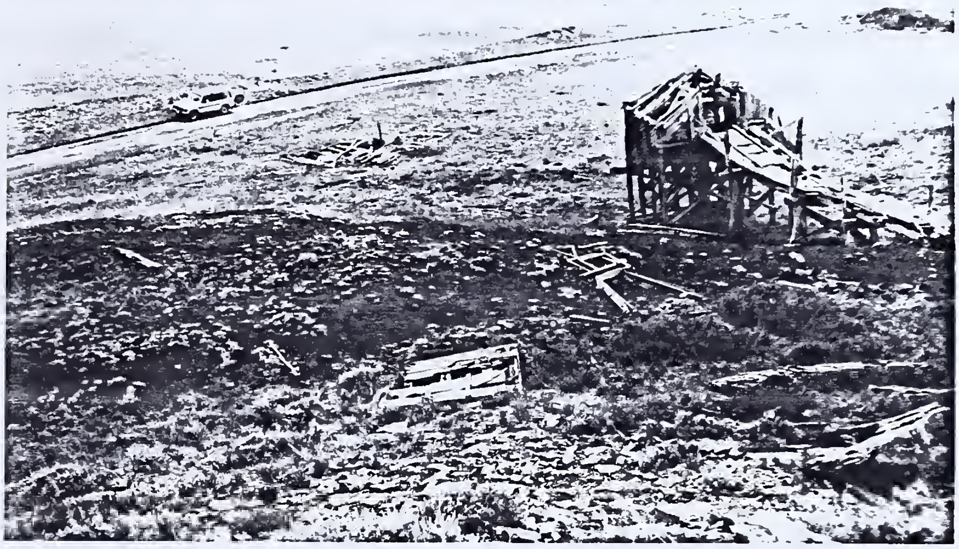


Figure 92. Overview of northern portion of site 24GV120, shwoing tipple (Feature 8), waste/slack pile (Feature 9), and possible scale (Feature 10).

Historical Development. Neither the tipple nor the scale are mentioned in the historic documents that describe Gustofson's original mining operation. In addition, Wesley Johnson, an area resident since approximately 1910, did not recognize the tipple as being associated with the Gustofson mine. (Both complexes are located on land patented by Gustofson in 1914, and for which he owned the coal rights.) The northernmost complex may be associated with the mining under the direction of Gustofson and Johnson, rather than with Gustofson's original mine. Wesley Johnson (1987) indicated that the "Johnson" involved with the Gustofson/Johnson mine also owned or had an interest in another mine, located farther south near Lavina. If Johnson was in the business of mining coal full time, he may have expanded the

operations in the area of the Gustofson mine and built the tipple and scale. However, this theory has not been documented.

Evaluation and Recommendation. Site 24GV120 does not appear to qualify for nomination to the National Register of Historic Places. HRA was unable to document a clear association between the mine and individuals or events of significance to the local community. The adits and the air shafts have collapsed, and the tipple and scale at the north end of the site are in poor condition. Due to a lack of physical integrity, the site cannot be considered representative of the historically significant activity of small-scale coal.

4.5.4 Site 24GV121, The Nick Schraff Mine

This reclamation site lies about one mile north of the remaining three sites in the Cameron Creek project area (see Figure 76). Site remains consists only of an adit (Feature 1), a coal slack pile (Feature 2), and a cut (Feature 3) that may represent an area where people stripped away sediments to expose the coal seam (Figures 93 and 94).

Historical Development. The parcel containing this site is part of the homestead entry of Russell E. Barrett, who obtained a patent to his property in September of 1917. The United States reserved the ditches and canals, but the ownership of underlying minerals went to Barrett along with the surface rights.

HRA researchers were able to find only one reference to coal at this locality. C.E. Lester (1914:6) mentions measuring the coal seam at a natural outcrop in either Section 14 or 15. The current landowner, Nick Schaff, indicated that he initiated purchase of the property in about 1959. According to Schaff, the previous landowner (a person named Zeire) mined coal with his three brothers until they sold the property in 1959 (Schaff 1987).

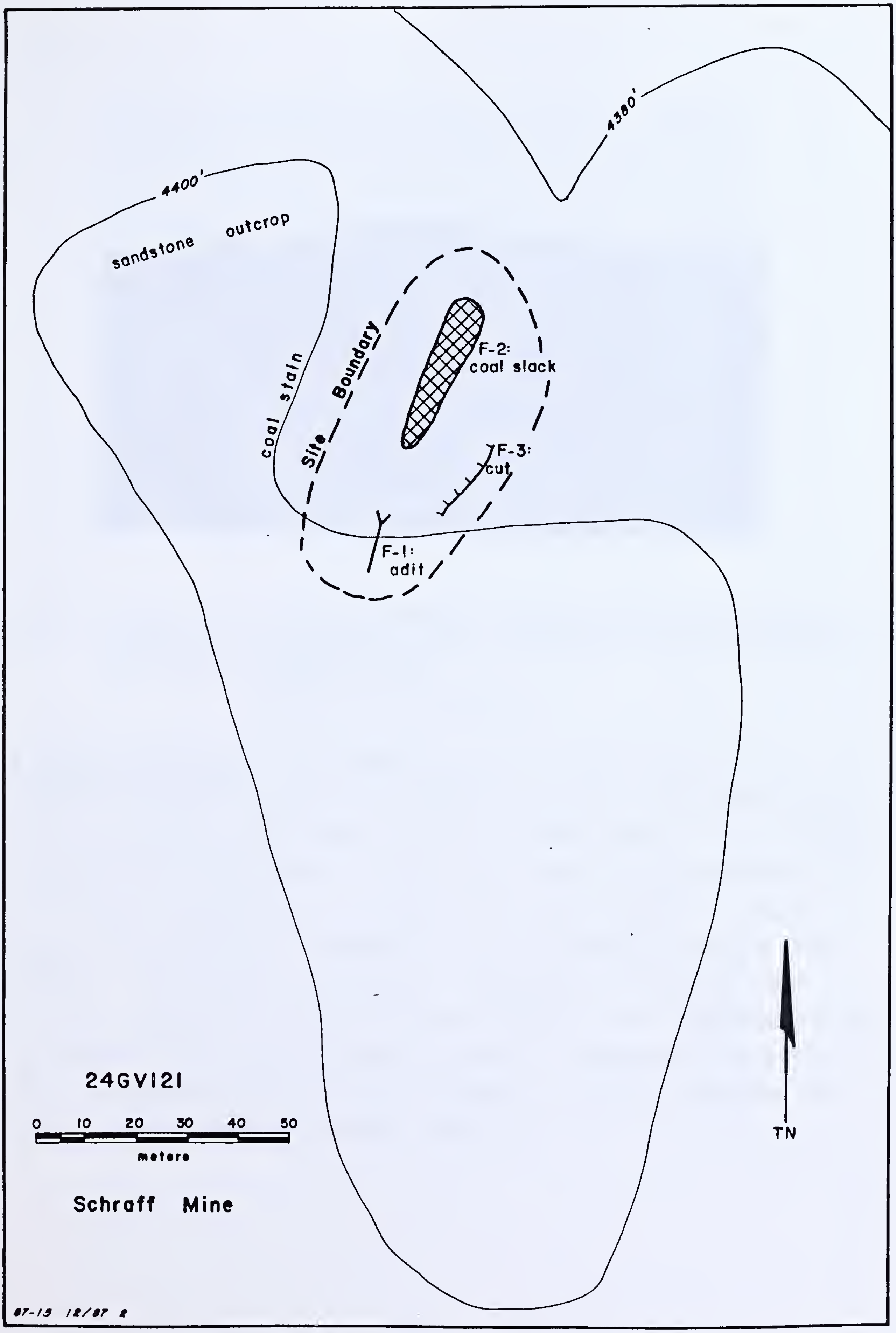


Figure 93. Plan map of site 24GV121, the Nick Schaff mine.

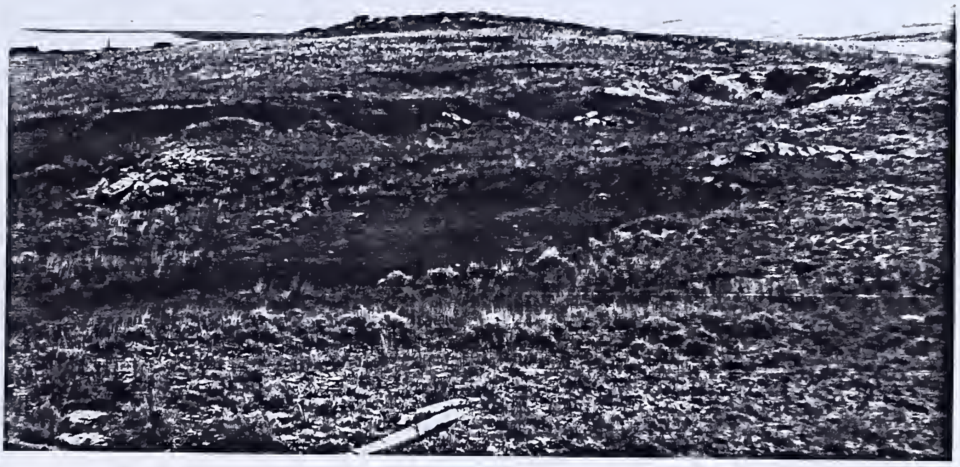


Figure 94. Overview of site 24GV121, looking east-southeast. Adit is in extreme right of photo, and coal slack and cut is at center left.

Isolate Schaff-1. In addition to the coal mine, one prehistoric isolate was found during the pedestrian inventory of the area surrounding the features to be reclaimed. The isolate was located near the crest of the hill, about 50 meters east of Feature 3 near a barbed wire fence, and consists of a corner-notched projectile point fragment with a slightly convex base (Figure 95). The point is similar in style to Pelican Lake points, which date to the Late Middle Period, and appears to be made of Tongue River Silicified Sediment. Intensive inventory of the area surrounding the isolate failed to yield evidence of additional prehistoric cultural material.

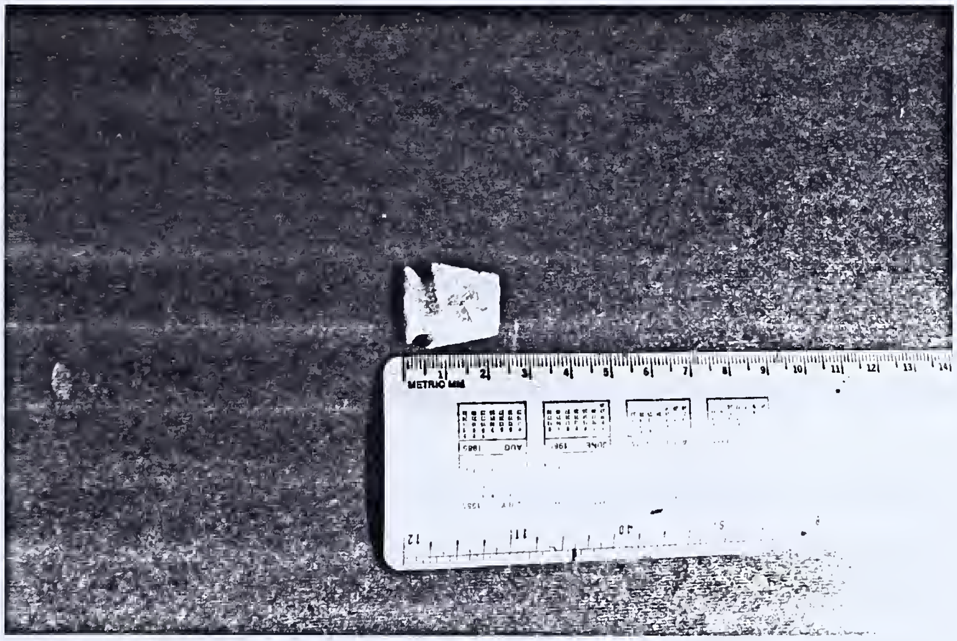


Figure 95. Detail of Pelican Lake projectile point isolate found by Schaff mine.

Evaluation and Recommendation. The remains at site 24GV121 do not appear to qualify for nomination to the National Register of Historic Places. The single entry to the mine has collapsed, and trash has been pushed in front of the opening. There are no indications that the site is associated with people or events of significance to the local community. Also, because the remains lack physical integrity, the site cannot be considered representative of the historically significant activity of small scale coal mining.

Reclamation at the Schaff site will probably consist of back-filling the mine entry, and seeding, fertilizing and mulching the area already disturbed by the mine. We recommend that no further cultural resource work be conducted at this site prior to reclamation.

4.6 Hill County Reclamation Area: Robert's II Project Area, Site 24HL889, the Yampen (Clack) Mine

Only one reclamation area is located in Hill County. The Robert's II project area is located approximately nine miles southeast of the town of Havre, the Hill County seat (Figure 96). The area is characterized by gently rolling prairie that is heavily dissected by northward-flowing, intermittent tributaries of the Milk River. Vegetation consists mostly of short prairie grasses with a few stands of cottonwoods adjacent to the drainage bottoms.

The current project area is located within the Milk River Coal Field. An overview of the coal mining history of this district is provided in a 1984 report submitted to DSL AMRB by GCM Services (Anderson 1984). In this report, Anderson provides a review of the coal industry in the Havre and Chinook areas, and a discussion of both large commercial mines in the area as well as the numerous wagon mines operating in the area.

In the process of researching the mining history of the area, Anderson found references to 49 wagon mines in local newspapers dating to the years between 1890 and 1930 (Anderson 1984:14-15). Apparently, the development of small wagon mines in the area surrounding Havre followed a pattern similar to other plains areas. From the 1890s to the 1930s, coal represented the only readily available and affordable source of fuel for ranchers and townspeople alike. Although there were several large mines operating year-round, the demand for coal was sufficient to support a large number of wagon mines. However, the demand for coal began to decline in the late 1930s, when the easily accessed, high quality coal was depleted, and new, affordable fuel sources, such as fuel oil and gas, became available to the general populace (Anderson 1984:15). The transformation from coal to fuel oil or gas was especially hard on small mines, which usually served a restricted market.

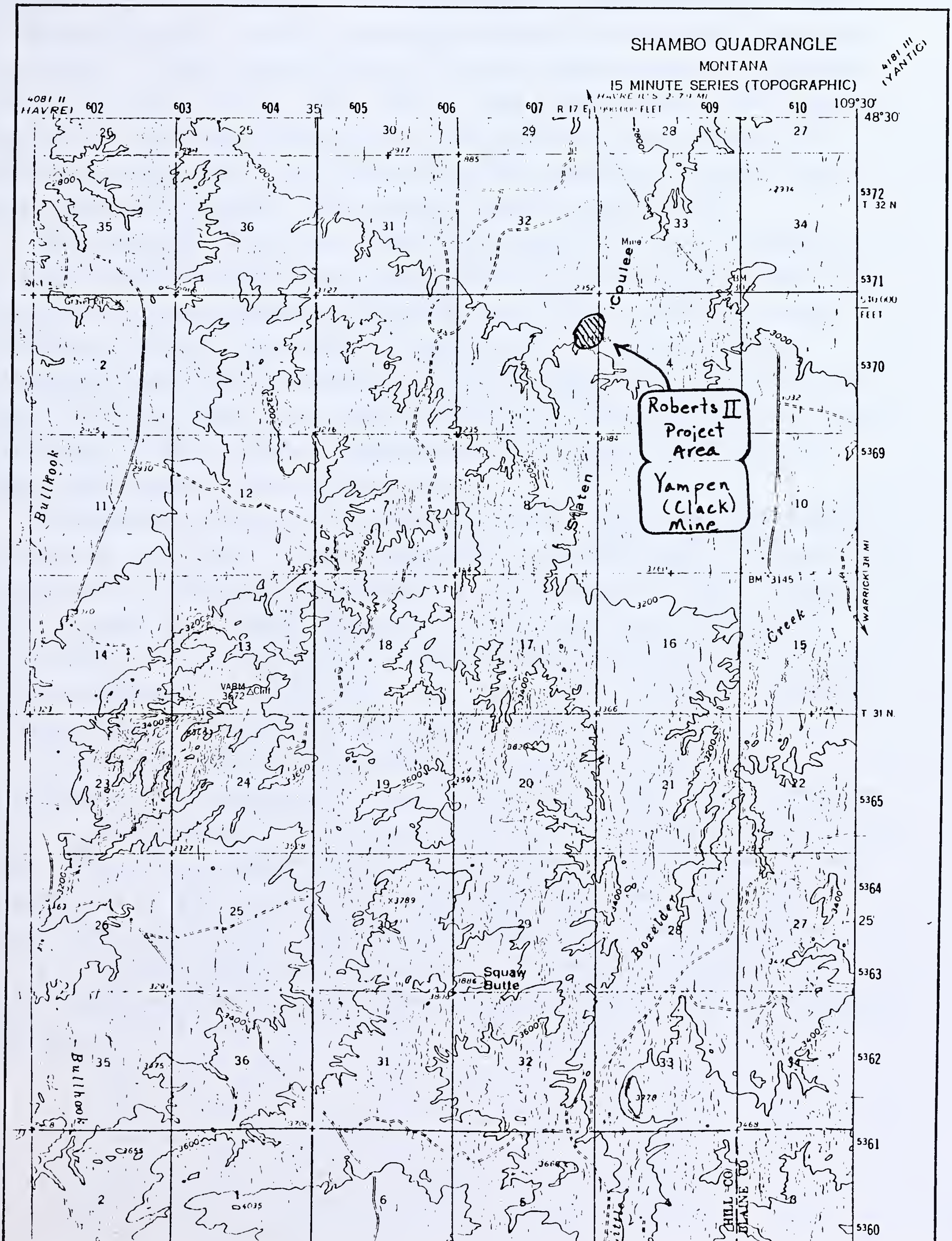


Figure 96. Copy of USGS Shambo topographic map showing location of Robert's II project area.

Site 24HL889 represents the remains of a small wagon mine operated by John Yampen. It is located in the bottom and sides of Staten Coulee, a major drainage feature in the area (Figures 97 and 98). Site remains cover a fairly large area and include subsidence areas, coal slack piles, and some board-lined features that may be surface openings for air shafts. Much debris is associated with this site, including the remains of wooden coal cars, automobile parts, bed springs, and a cook stove.

The remains at the site can be divided into four clusters that may represent different entries to the underlying coal seam. The first cluster includes Features 1-3, and is located in the southeast corner of the site. Feature 1 is a long, narrow subsidence area that probably is a collapsed entry into the coal seam. A large coal slack pile (Feature 2) lies directly in front of Feature 1 and probably represents the former location of a tipple and loading area (Figure 99).

The second cluster of features is located in the northeast portion of the site. These include a collapsed entry (Feature 4, Figure 100), two small subsidence pits (Features 7 and 9, Figure 101), a coal slack pile (Feature 5), and two wood-lined pits (Features 6 and 8) that may be the surface manifestation of air shafts (Figures 102 and 103). This area also includes a scatter of wood debris that may be the remains of a structure.

The third entry is represented by only two features, a subsidence area (Feature 10) and a dispersed slack pile (Feature 11). A fourth entry to the coal is found on the west edge of the site. Feature 15 appears to be a collapsed tunnel or entry-way (Figure 104), with three coal slack piles located immediately below (Features 12-14). Two small subsidence areas (Features 16 and 17, Figure 105) are located upslope (south) of Feature 15. Their location gives one an idea of the course of the underground workings.

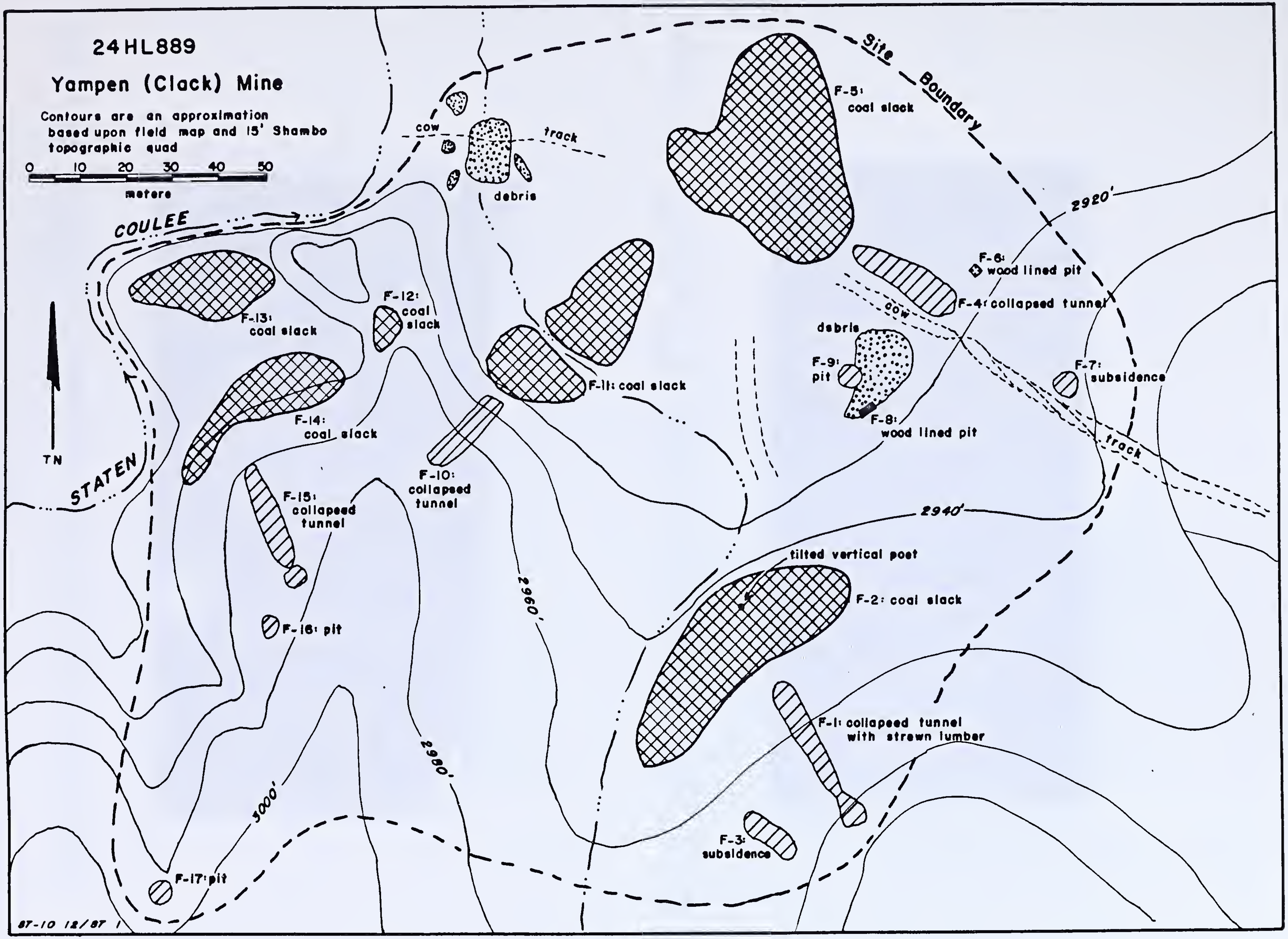


Figure 97. Plan map of site 24HL889, the Yampen (Clack) mine.

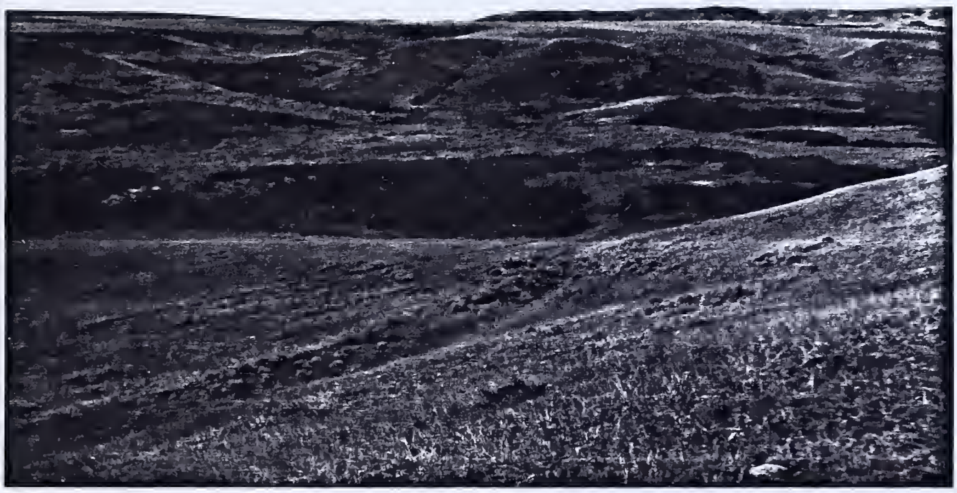


Figure 98. Overview of site 24HL889, looking southeast from west bank of Staten Coulee.

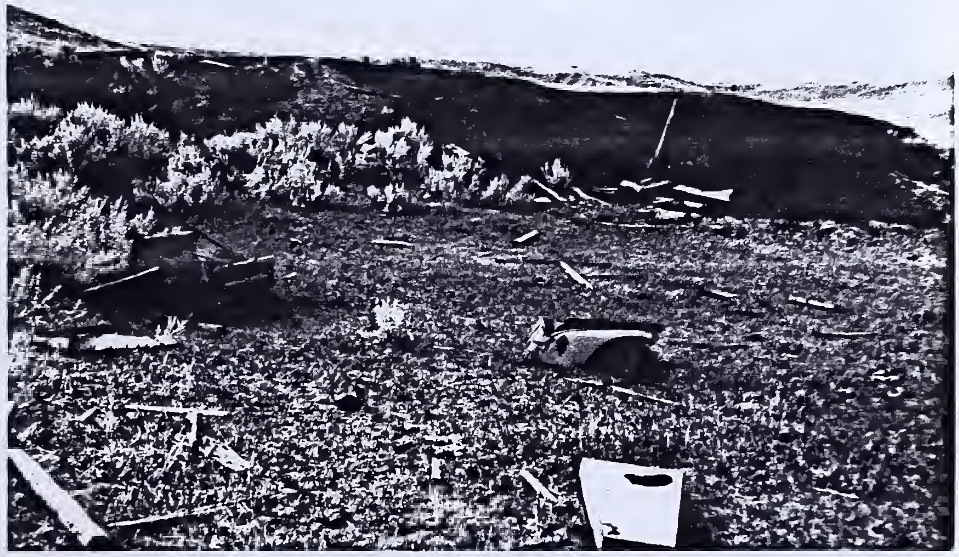
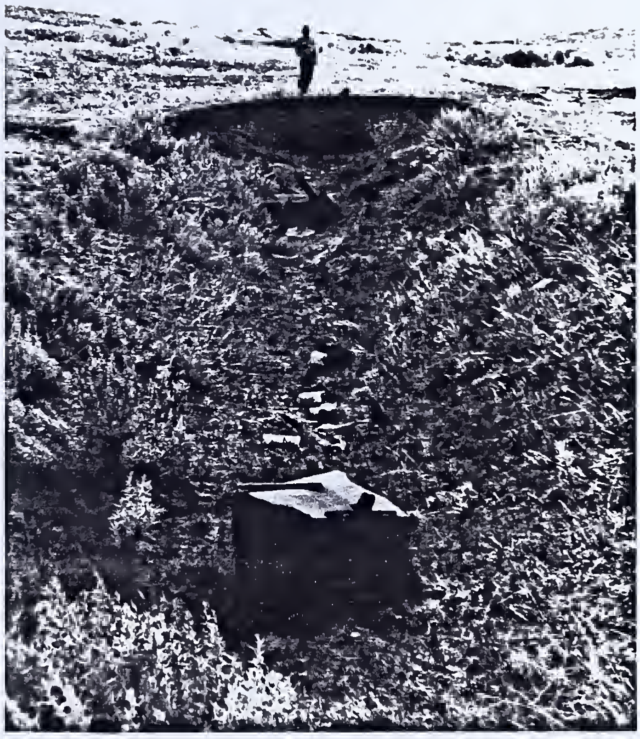


Figure 99. Feature 2, base of large coal slack pile at site 24HL889.

Figure 100. Looking southeast along collapsed entry tunnel (Feature 4) at site 24HL889.



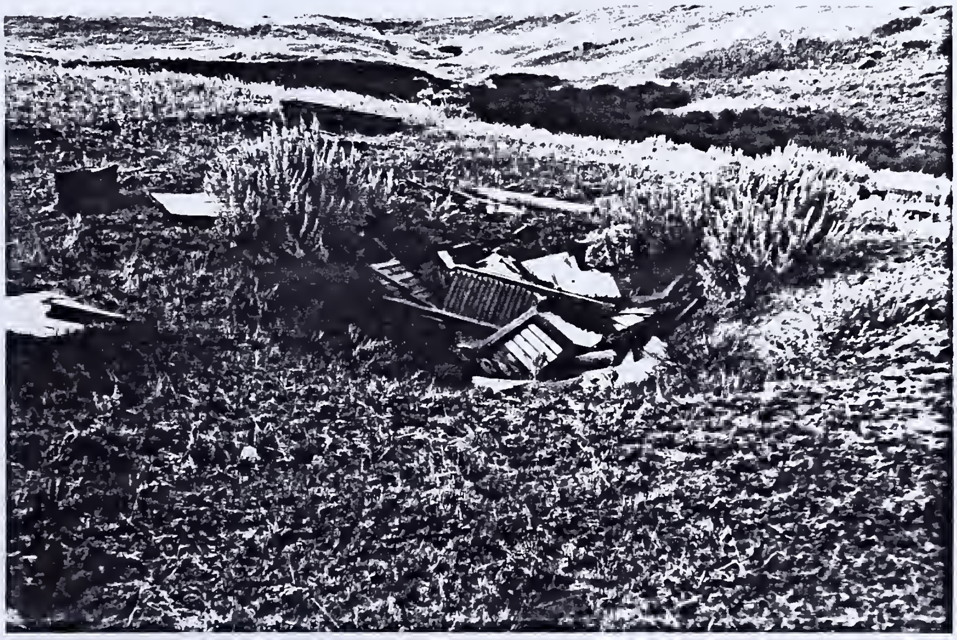


Figure 101. Feature 9, small subsidence pit at site 24HL889.

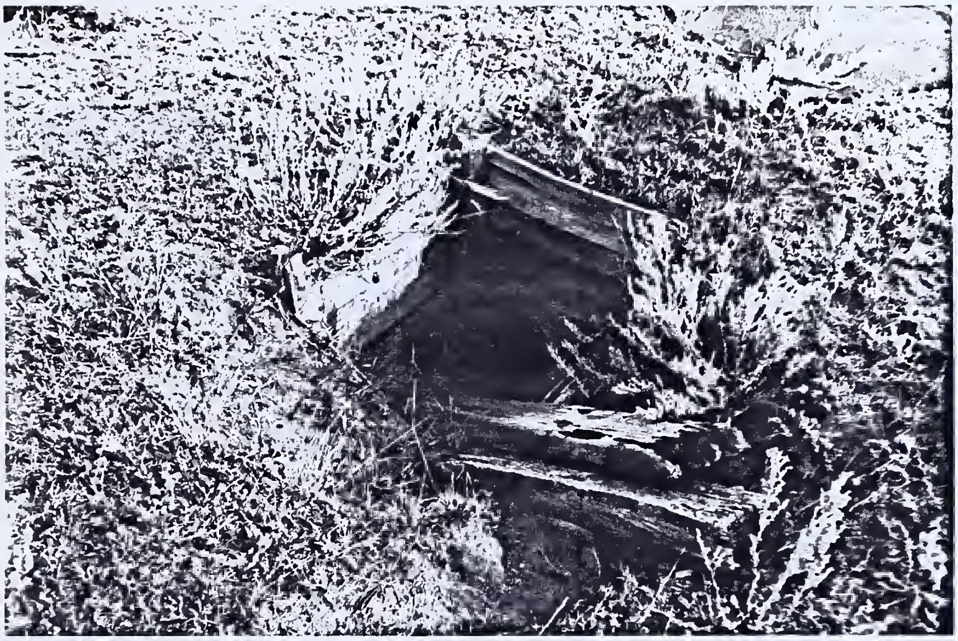


Figure 102. Feature 6, possible air shaft at site 24HL889.

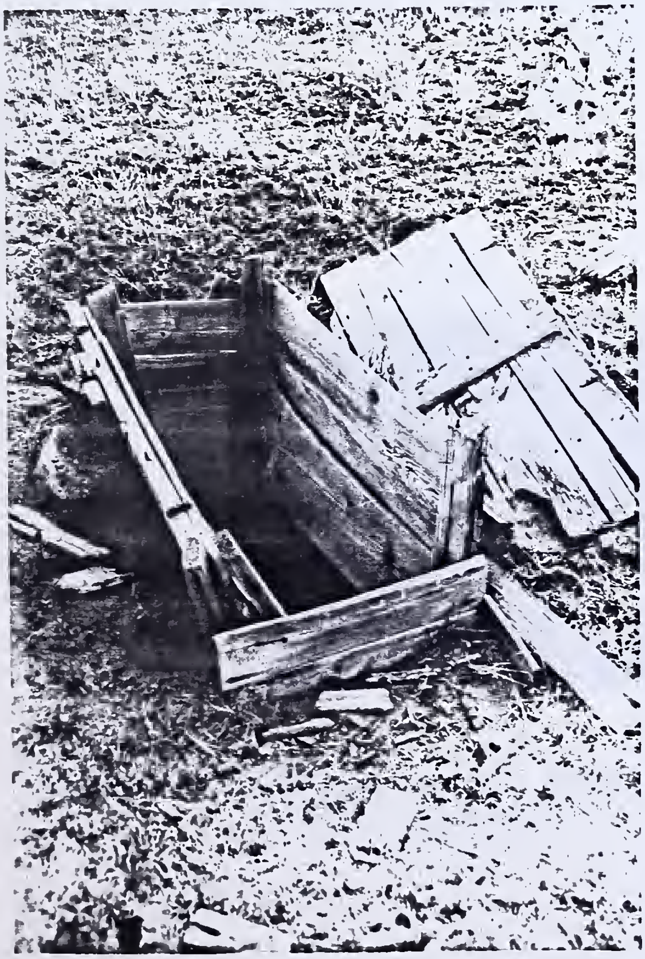


Figure 103. Feature 8, possible air shaft at site 24HL889.

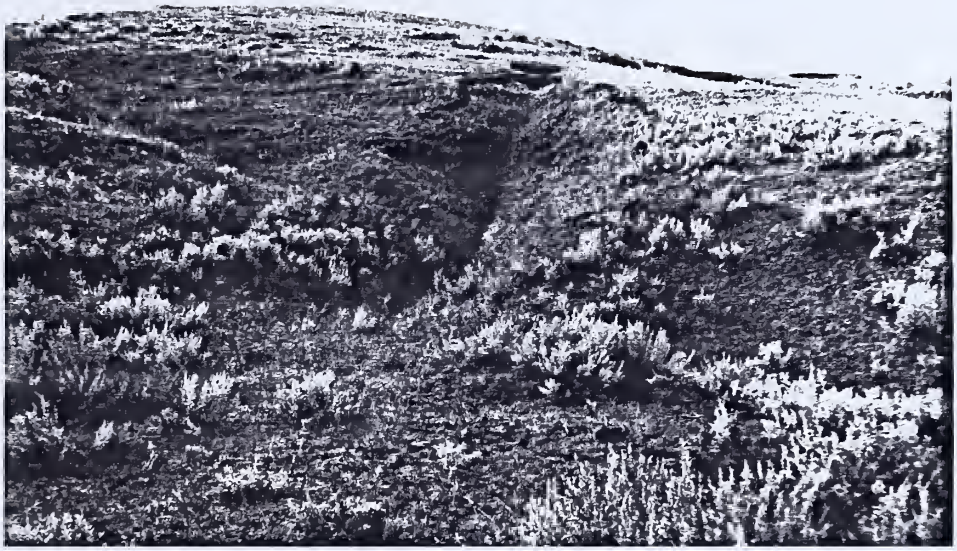


Figure 104. Feature 15, subsidence over tunnel at site 24HL889.

Figure 105. Feature 17, subsidence pit just below edge of hill at site 24HL889.

Historical Development. The parcel of land that contains this site is part of the homestead entry of Henry F. Clack, who received a patent to his land in June 1910. Clack received both surface and mineral rights with his patent. This site is discussed in a 1910 publication of the U.S. Geological Survey as the "Clack prospect" (Pepperberg 1910:95). The bed is described as containing a total of four feet of coal, and mining is described in the following passage:

> In working the above bed the 1-foot bone is mined out, then the coal is loosened by firing shots first in the bottom and then in the top bench of coal. In this way large lumps are obtained. The coal is of good quality and represents the same zone as that exposed in the Staton mine about 1 mile east of this point (Pepperberg 1910:96).

The only other information that could be obtained regarding this site came from a local informant, Mr. Bob Walen. Walen's father came to the Havre area in 1890, and the family has lived on a homestead claim just north of the current project area since about 1910. According to Bob Walen (1987), John Yampen was the person responsible for mining at this location. Although the site is locally known as the Clack mine, after the original patentee, John Yampen was the only individual to actually extract coal from the area (Walen 1987).

Mr. Walen indicated that this was a small operation, worked only by Yampen and possibly one or two other hands. The mine provided coal to the community of Havre and local residents. ("Yampen Coal" is the name of one of the wagon mines referred to in Anderson's 1984 report.) Yampen blasted the coal from the seam, and then loaded it into wooden coal cars. He used a horse to pull the loaded cars along a tramway to the exterior of the mine. Apparently, this mine was most productive during the late 1910s and early 1920s, when the demand for coal was high. Walen (1987) estimated that Yampen mined the area until the early 1940s. [Title to this property remained in possession of the Clack estate until 1957, when it was transferred to the current

owner, John M. O'Neil, indicating that Yampen may have leased the coal rights from the Clack estate.]

Evaluation and Recommendation. This site does not appear to be eligible for nomination to the National Register of Historic Places. There are no indications that this site is associated with people or events of local significance. (Mr. Walen indicated that the Yampen mine was a rather small enterprise compared to other mines in the immediate vicinity.) Also, the site remains lack integrity and no longer adequately represent the historically significant activity of small scale coal mining.

At the time of the HRA field survey, Delta Engineering, Inc., had no information or preliminary plans regarding the Robert's II project. However, judging from reclamation plans developed for similar sites, work at this site likely will consist of back-filling and regrading the subsidence areas, removal of the material in the slack piles (some of this may be used to fill the subsidence areas), and disposal of the debris scattered across the site area. All areas of disturbance probably will be reseeded, fertilized, and mulched. Since there are no additional sites located in the vicinity of the features to be reclaimed, we recommend that no further cultural resource work be conducted at this site.

5.0 SUMMARY AND CONCLUSIONS

None of the sites recorded during the inventories of the 12 proposed reclamation areas appear to be eligible for nomination to the National Register of Historic Places. All of the mines are representative of small wagon mines that produced coal for sale to local ranching populations and small communities throughout Montana. However, the integrity of the physical remains has been compromised to the point where they can no longer be considered representative of the historic activities with which they are associated.

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